

Fossilium Catalogus

II: Plantae.

Editus a

W. Jongmans.

Pars 13:

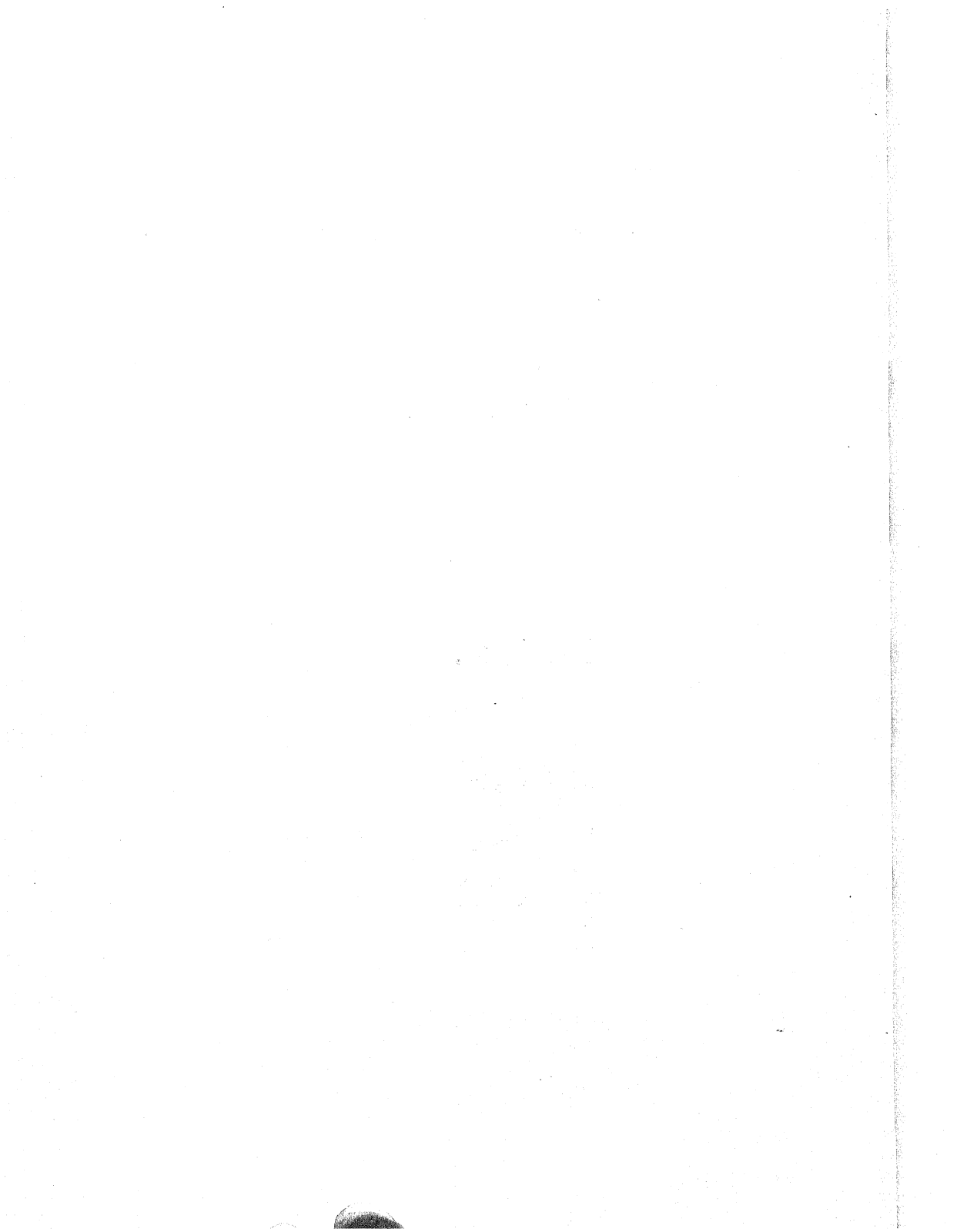
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Muscineae.



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1927





Introductory Remarks.

By far the largest number of entries in the following list will be found to belong to quite recent geological periods; their claim to be considered "fossil" in the true sense being somewhat dubious. The number of undoubted mosses known from rocks earlier than the Tertiary is remarkably small. This is surprising in view of the presence in Carboniferous rocks of Hepaticae, very similar to existing species, having been clearly established (Walton, Carboniferous Bryophyta, 1, in Ann. of Bot., XXXIX, p. 563, t. XIII).

One would have supposed that mosses with their firmer, often almost ligneous tissues would have stood a better chance of preservation than the more delicate stems of the foliose Hepaticae; but this does not appear to have been the case. Certain scale-like structures from the coal measures have been supposed to be moss leaves, but apart from their unusual dimensions the cell structure does not appear to be bryophytic, and they resemble so closely the stipes scales of some modern ferns that the conclusion seems to me inevitable that they must be considered to represent some similar organ of the Carboniferous Fern-allies. *Muscites polytrichaceus* Ren. and Zeiller, however, has strong claims to be considered a true Carboniferous moss, and the same may be said of *Muscites Bertrandii* Lignier.

Records of fossil or prehistoric mosses, scattered throughout botanical and geological literature, often unindexed, are exceedingly hard to trace, and it is fairly certain that I have overlooked numerous sources of information. The list of works given in the Bibliography will however show what papers have actually been consulted, and make it possible for such gaps as exist to be readily filled up.

It may be of some use to make reference to certain works which are of general importance or which have critical remarks on species already recorded. Schimper's *Traité de Paléontologie végétale* (1869) gives a valuable résumé of most of the records of fossil mosses up to the time of its publication. Neuweiler, *zur Interglazialflora der Schweizerischen Schieferkohlen* (1905), has some useful critical notes on the fossil *Hypna* described by Schimper in the above work; and Caspary, in Klebs, *Flora d. Bernsteins* (1906), does the same for many of the records of mosses by Goeppert in his great work on the Amber Flora. Some valuable notes are to be found in Britton and Hollick, *American fossil mosses*, etc. (1907); and Weyland, *Beitr. zur Kenntnis fossiler Moose* (1925) clears up many points left doubtful by Engelhardt and Kinkel in their *Oberpliocäne Flora und Fauna des Untermainals* (1908).

I have endeavoured to indicate in general terms the stratigraphical origin of the recorded mosses as far as possible, where such origin is mentioned in the title or elsewhere in the paper. For the most part I have used the terms employed by the au-

thors. These frequently employ different terms for the same geological epoch. Such terms as Pleistocene, Quaternary, Diluvial, Recent, etc., therefore, must not be taken as necessarily denoting different periods.

The taxonomic arrangement of the following catalogue is (with one or two very slight departures) that of Brotherus in the *Musci*, Engler & Prantl, *Pflanzenfamilien*, Ed. I, 1898—1909.

The species under each genus are arranged alphabetically; the entries under each species chronologically. An index of synonyms is given at the end.

My thanks are due for assistance in the compilation of this list in many directions, notably to the Botanical and Geological Departments of the British Museum, especially to Mr. W. N. Edwards of the Geological Department. Also to Mrs. Britton of the New York Botanical Garden, Mons. J. Cardot of Paris, Prof. I. Györfy of Szeged, Hungary, Herr Loeske of Berlin, Dr. Docturovsky of Moscow, and Dr. Jongmans, for information about and transcripts from papers published in their respective countries to which I was unable to obtain access.

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- (N. B. The references to the Figures on Plate 22 are given incorrectly in the text, and partially in the Reference to Plates. The references in the Erläuterung der Abbildung are correct with the exception of Figures 22, 23, which certainly

- do not represent the same plant as Figs. 18—21, or indeed any species of *Neckera*.)
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- Fossile Flora des Krakauer Diluviums. — Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 209; 1914.
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Sphagnaceae.

Sphagnum Ehrh.

Sphagnum acutifolium Ehrh.

- 1896 *Sphagnum acutifolium* aggr. Farneti, R. Ricerchè di briologia palaeont. [Atti del Istit. Bot. della Reale Univ. di Pavia, Ser. II, vol. V, p. 58.] Recent
- 1904 *Sphagnum acutifolium* aggr. Weber, C. A. in Müller G. und Weber. Ueber eine frühdiluviale... Flora bei Lüneburg. [Abh. Kgl. preuss. geol. Landesanstalt und Bergakad., Heft 40, p. 15.] Preglacial
- 1909 *Sphagnum acutifolium*. Hartz, N. Bidr. til Danmarks tertiaere... Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 261.] Interglacial
- 1909 *Sphagnum* cf. *acutifolium*. Schuster, J. Palaeobot. Not. aus Bayern. [Ber. bayer. bot. Gesellsch., XII, I, p. 58.]
- 1917 *Sphagnum acutifolium* aggr. Weber, C. A. Die Pflanzenwelt des Rabutzer Beckentons... [Bot. Jahrb. Syst., LIV, Beibl. Nr. 120, p. 13.]
- 1918 *Sphagnum* ? *acutifolium*. Beyle, M. Ueber einige Ablagerungen fossiler Pflanzen der Hamburger Gegend. Zweiter Teil. [Jahrb. der Hamburg. wiss. Anst., XXXVI, p. 41 ter.] Recent

Sphagnum compactum De Cand.

- 1828—1844 *Sphagnum compactum*. Brongniart, Ad. Hist. des végétaux fossiles. Paris, p. 96, tab. X. No locality or data given

Sphagnum cuspidatum Ehrh.

- 1896 *Sphagnum cuspidatum*. Farneti, R. Ricerche di briologia palaeont. [Atti del Istit. Bot. della Reale Univ. di Pavia, Ser. II, vol. V, p. 58.] Recent
- 1904 *Sphagnum cuspidatum* aggr. Weber, C. A. in Müller G. und Weber. Ueber eine frühdiluviale... Flora bei Lüneburg. [Abh. Kgl. preuss. geologisch. Landesanstalt und Bergakad., Heft 40, p. 15.] Preglacial
- 1909 *Sphagnum* cf. *cuspidatum*. Schuster, G. Palaeobot. Not. aus Bayern. [Ber. bayer. bot. Gesellsch., XII, I, p. 58.]
- 1914 *Sphagnum cuspidatum*. Weber, C. A. Die Mammutflora von Borna. [Abh. nat. Ver. Bremen, XXIII, Heft I, p. 14.] Glacial

- 1917 *Sphagnum cuspidatum*. Rudolph, K. Untersuch. über den Aufbau böhmisch. Moore. [Abh. k. k. zool.-bot. Gesellsch. Wien, IX, p. 86.] Recent
- 1924 *Sphagnum cuspidatum*. Burrell, W. H. Pennine Peat. [Naturalist, 1924, p. 148.] Recent

***Sphagnum cymbifolium* Ehrh.**

- 1869 *Sphagnum cymbifolium*. Schimper, W. P. *Traité de Paléontologie Végétale*. I, p. 253. Quaternary; Lignites, Dürnten, Switzerland
- 1895 *Sphagnum cymbifolium*. Gepp, A. Fossil plant-remains in peat. [Journ. of Bot., XXXIII, p. 181.] Recent submarine peat.
- 1897 *Sphagnum cymbifolium* or near it. Beck, R., und Weber, C. A. Ueber ein Torflager.... des sächsisch. Erzgebirges. [Zeitschr. d. Deutsch. geolog. Gesellsch., XLIX, p. 666.] Diluvial
- 1899 *Sphagnum cymbifolium*. Bertrand, C. E. Descr... de charbon papyracé à Prisches en 1859. Ann. Soc. géol. du Nord, XXVIII, p. 180.] Pleistocene
- 1904 *Sphagnum cymbifolium* aggr. Weber, C. A. in Müller, G. und Weber, Ueber eine frühdiluviale Flora bei Lüneburg. [Abh. Kgl. preuss. geologisch. Landesanstalt und Bergakad., Heft 40, p. 15.] Preglacial
- 1905 *Sphagnum cymbifolium*. Neuweiler, E. Die prae-hist. Pflanzenreste Mitteleuropas... [Vierteljahrs. Naturforsch. Ges. Zürich, I, Heft 6, p. 94.]
- 1909 *Sphagnum cymbifolium*. Hartz, N. Bidr. til Danmarks tertiære.... Flora.... [Danmarks geol. Undersøgelse II Raekke, No. 20, p. 261.] Interglacial
- 1912 *Sphagnum cf. cymbifolium*. Whitehead, H., Goodchild, H. H., and Reid, C. Some notes on "moorlog" [Essex Naturalist, XVI, p. 56.] Moorlog-submarine peat from Dogger Bank, North Sea
- 1913 *Sphagnum cymbifolium*. Beyle, M. Ueber einige Ablagerungen fossiler Pflanzen der Hamburger Gegend. Erster Teil. [Jahrb. der Hamburg. wiss. Anst., XXX, 6 Beih., p. 83.] Recent
- 1917 *Sphagnum palustre* Linn. Rudolph, K. Untersuch. über den Aufbau böhmisch. Moore. [Abh. k. k. zool.-bot. Gesellsch. Wien, IX, p. 86.] Recent
- 1923 *Sphagnum cymbifolium*. Baumberger, E., etc., Die diluv. Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz; geotechn. Ser., Lief. 8, pp. 83, 338.] Quaternary,
- 1924 *Sphagnum cymbifolium*. Burrell, W. H. Pennine Peat. [Naturalist, 1924, p. 148.] Recent

***Sphagnum fimbriatum* Wils.**

- 1908 *Sphagnum fimbriatum* (or *teres*). Stoller, J. Beitr. zur Kenntn. der diluv. Flora... Norddeutschlands. [Jahrb. d. Kgl. preuss. geolog. Landesanstalt, XXIX, p. 119.] Diluvial

- 1910 *Sphagnum fimbriatum* (or *Girgensohnii*). Dixon, Postglacial
H. N. Some "Neolithic" Moss remains from Fort
William. [Ann. Scott. Nat. Hist., 1910, p. 103.]
- 1912 *Sphagnum fimbriatum*. Stark, P. Beitr. zur Glacial
Kennntn. der eiszeitlich. Fl. und Faun. Badens.
[Ber. naturforsch. Gesellsch. Freiburg i. B., XIX,
p. 88.]

***Sphagnum Girgensohnii* Rüss.**

cf. *S. fimbriatum* (1910).

***Sphagnum imbricatum* (Hornsch.) Rüss.**

- 1914 *Sphagnum imbricatum*. Weber, C. A. Die Mam- Glacial
mutflora von Borna. [Abh. Nat. Ver. Bremen,
XXIII, Heft 1, p. 15.]

***Sphagnum intermedium* Hoffm.**

cf. *S. recurvum*.

***Sphagnum Lindbergii* Schimp.**

- 1918—20 ? *Sphagnum Lindbergii*. Docturovsky, V. S., Interglacial
and Kudriashev, V. Results of Russian studies on
peat moors. [Reports on Peat, 4.]

***Sphagnum Ludwigii* Schimp.**

- 1869 *Sphagnum Ludwigii* Schimp., Traité de Paléon- Tertiary
tologie Végétale, p. 252. (*Gymnostomum ferrugi-*
neum Ludw., Foss. Pflanzen aus der Rhein-
isch Tertiär-Formation, in Palaeontographica,
VIII, p. 165, tab. 63; 1859.)

Note. Schimper places it between *S. cymbi-*
folium and *S. subsecundum*. It is highly im-
probable that it is distinct from one of the
existing species. Its origin is "dans l'hématite
brune de Dernbach (Nassau)". Seward (Fossil
Plants, 1, p. 241) expresses a doubt as to whether
the generic position can be satisfactorily deter-
mined. Schimper, however, had presumably exa-
mined the specimen.

***Sphagnum magellanicum* Brid.**

- 1898 *Sphagnum medium* Limpr. Andersson, Gunnar. Quaternary
Stud. öfver Finlands . . . Kvartärflora. [Bull. de
la Commission géol. de Finlande, Tome 2, No. 8,
p. 138.]
- 1904 *Sphagnum medium* Limpr. Weber, C. A. in Mül- Preglacial
ler, G. und Weber, Ueber eine frühdiluviale . . .
Flora bei Lüneburg. [Abh. Kgl. preuss. geologisch.
Landesanstalt und Bergakad., Heft 40, pp. 15,
18.]
- 1917 *Sphagnum magellanicum*. Rudolph K. Recent
über den Aufbau böhmisch. Moore. [Abh. k. k.
zool.-bot. Gesellsch. Wien, IX, p. 86.]

- 1917 *Sphagnum medium* Limpr. Weber, C. A. Die Pflanzenwelt des Rabutzer Beckentons [Bot. Jahrb. Syst. LIV, Beibl. No. 120, p. 14.]

***Sphagnum medium* Limpr.**

cf. *S. magellanicum*.

***Sphagnum palustre* Linn.**

cf. *S. cymbifolium*.

***Sphagnum papillosum* Lindb.**

- 1909 *Sphagnum papillosum*. Hartz, N. Bidr. til Danmarks tertiære Flora. [Danmarks geol. Undersøgelser, II Raekke, No. 20, p. 261.] Interglacial
- 1914 *Sphagnum papillosum*. Weber, C. A. Die Mammutflora von Borna. [Abh. Nat. Ver. Bremen, XXIII, Heft 1, p. 15.] Glacial
- 1924 *Sphagnum papillosum*. Burrell, W. H. Pennine Peat. [The Naturalist, 1924, p. 148, tab. X.] Recent

***Sphagnum recurvum* P. Beauv.**

- 1898 *Sphagnum recurvum*. Andersson. Gunnar. Stud. öfver Finlands Kvartärflora. [Bull. de la Commission géol. de Finlande, Tome 2, No. 8, p. 138.] Quaternary,
- 1904 *Sphagnum cf. recurvum*. Weber C. A., in Müller G. und Weber, Ueber eine frühdiluviale Flora bei Lüneburg. [Abh. Kgl. preuss. geolog. Landesanstalt und Bergakad., Heft 40, p. 15.] Preglacial
- 1911 *Sphagnum intermedium* Hoffm. Dixon, H. N. in Lewis, F. J., The Plant Remains in the Scottish Peat Mosses. Part IV. [Trans. Roy. Soc. Edinb., XLVII, p. 830.] Recent, Iceland peat.
- 1917 *Sphagnum recurvum* var. *parvifolium* Warnst. (as *S. brevifolium* Röhl). Rudolph, K. Untersuch. über den Aufbau böhmisch. Moore. [Abh. k. k. zool.-bot. Gesellsch. Wien, IX, p. 87.] Recent

***Sphagnum rubellum* Wils.**

- 1898 *Sphagnum rubellum*. Andersson, Gunnar. Stud. öfver Finlands Kvartärflora. [Bull. de la Commission géol. de Finlande, Tome 2, No. 8, p. 139.] Quaternary,
- 1917 *Sphagnum Wilsoni* Röhl. Rudolph, K. Untersuch. über den Aufbau böhmisch. Moore. [Abh. k. k. zool.-bot. Ges. Wien, IX, p. 87.] Recent

***Sphagnum squarrosum* Pers.**

- 1896 *Sphagnum squarrosum*. Farneti, R. Ricerche di briologia palaeont. [Atti del Istit. Bot. della Reale Univ. di Pavia, Ser. II, vol. V, p. 57.] Glacial

***Sphagnum subbicolor* Hampe.**

- 1923 *Sphagnum subbicolor*. Baumberger, E., etc. Die diluv. Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz; geotechn. Ser., Lief. 8, p. 83.] Quaternary

Sphagnum subsecundum Nees aggr.

- 1895 *Sphagnum* ? *subsecundum*. Gepp, A. Fossil plant-remains in peat. [Journ. of Bot., XXXIII, p. 181.] Recent sub-marine peat.
- 1908 *Sphagnum subsecundum*. Stoller, J. Beitr. zur Kenntn. der diluv. Flora Norddeutschlands. [Jahrb. d. Kgl. preuss. geol. Landesanstalt, XXIX, p. 119.] Diluvial

Sphagnum teres Aongstr.

- 1904 *Sphagnum teres*. Weber, C. A., in Müller, G. und Weber, Ueber eine fröhdiluviale Flora bei Lüneburg. [Abh. Kgl. preuss. geol. Landesanstalt und Bergakad., Heft 40, p. 15 bis.] Preglacial
- 1908 *Sphagnum teres* (or *fimbriatum*). Stoller, J. Beitr. zur Kenntn. der diluv. Flora Norddeutschlands. [Jahrb. d. Kgl. preuss. geol. Landesanstalt, XXIX, p. 119.] Diluvial
- 1912 *Sphagnum teres*. Stark, P. Beitr. zur Kenntn. des eiszeitlich..... Badens. [Ber. naturforsch. Gesellschaft. Freiburg i. B., XIX, pp. 88, 116.] Glacial
- 1918—20 *Sphagnum teres*. Docturowsky, V. S., and Kudriashev, V. Results of Russian studies on peat moors. [Reports on Peat, 4.] Postglacial
- 1925 *Sphagnum teres*. Dixon, H. N. Moss remains in Russian Peat. (Journ. of Bot., LXIII, p. 370.) Interglacial

Sphagnum Wilsoni Röhl.

cf. *S. rubellum*.

Undetermined species of Sphagnum.

- 1852 *Cryptothecium antediluvianum*. Hueben., MS., nov. gen. et sp., in Weber, C. Otto. Die Tertiärflora der niederrhein. Braunkohlenformation. [Palaeontographica, 11, p. 228.] This is considered by Schimper as without doubt a species of *Sphagnum*.
- 1903 *Sphagnum* sp. Range, Paul. Das Diluv. von Lübeck und seine Dryastone. [Zeitschr. f. Naturwiss., LXXVI, pp. 191, 256.] Diluvial
- 1904 *Sphagnum* sp. Weber, C. A., in Müller, G. und Weber, Ueber eine fröhdiluviale.... Flora bei Lüneburg. [Abh. Kgl. preuss. geol. Landesanstalt und Bergakad., Heft 40, p. 15.] Preglacial
- 1909 *Sphagnum* sp. Hartz, N. Bidr. til Danmarks tertiære Flora. [Danmarks geol. Undersögelse, II Raekke, No. 20, p. 261.] Interglacial
- 1910 *Sphagnum* sp. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersögelse, II Raekke, No. 25, p. 106.] Diluvial
- 1913 *Sphagnum* sp. Travis, C. B. and W. G. On plant remains in postglacial gravels at Seaforth, Liverpool. [Lancashire Naturalist, 1913, p. 20.] Postglacial
- 1914 *Sphagnum* sp. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cra-

- covie d. sc. math. et nat., Sér. B. No. 2 B,
 p. 248.]
 1918 *Sphagnum* sp. Beyle, M. Ueber einige Ablage- Recent
 rungen fossiler Pflanzen der Hamburger Gegend.
 Zweiter Teil. [Jahrb. der Hamburg. wiss. Anst.,
 XXXVI, p. 39.]
 1918—20 *Sphagnum* sp. (§ Subsecunda). Docturovsky, Interglacial
 V. S. and Kudriashev, V. Results of Russian
 studies on peat moors. [Reports on Peat, 4.]
 1920 *Sphagnum* sp. Baker, Frank C. The Life of the Glacial
 Pleistocene or Glacial period. [Univ. of Illinois,
 Bull., XVII, pp. 207, 211, 276, 280, 377.]
 1923 *Sphagnum* sp. Baumberger, E., etc. Die diluv. Quaternary
 Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz;
 geotechn. Ser., Lief. 8, p. 338.]

Andreaeaceae.

Andreaea Ehrh.

Andreaea Huntii Limpr.

- 1912 *Andreaea Huntii*. Stark, P. Beitr. zur Kenntn. Glacial
 der eiszeitlichen Fl. und Fauna Badens. [Ber.
 naturforsch. Gesellsch. Freiburg i. B., XIX, p. 88.]

Andreaea petrophila Ehrh.

1914. *Andreaea petrophila*. Zmuda, A. J. Fossile Flora Diluvial
 des Krakauer Diluviums. [Bull. int. Acad. Sci.
 Cracovie d. sc. math. et nat., Ser. B., No. 2 B,
 p. 248.]

Andreaea Rothii Web. & Mohr.

- 1910 *Andreaea Rothii*. Dixon, H. N. Some "Neolithic" Postglacial
 Moss remains from Fort William. [Ann. Scott.
 Nat. Hist., 1910, p. 103.]

Andreaea sp.

cf. Sporogonites exuberans.

Dicranaceae.

Ditrichum Timm.

Ditrichum flexicaule (Schleich.) Hampe.

- 1902 *Ditrichum flexicaule*. Hartz, N. Bidr. til Danmarks Lateglacial
 senglacial Flora og Fauna. [Danmarks geol. Un-
 dersøgelse, II Række, No. 11, p. 11.]
 1909 *Ditrichum flexicaule*. Hartz, N. Bidr. til Dan- Interglacial
 marks tertiaere Flora [Danmarks geol. Un-
 dersøgelse, II Række, No. 20, p. 260.]

- 1910 *Ditrichum flexicaule*. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.] Diluvial
- 1912 *Ditrichum flexicaule* var. *densum*. Dixon, H. N. in Warren, S. H. A late Glacial stage in the Lea Valley. [Quart. Journ. Geol. Soc., LXVIII, p. 231.] Late glacial
- 1918—20 *Ditrichum flexicaule*. Docturovsky, V. S., and Kudriashev, V. Results of Russian studies on peat moors. [Reports on Peat, 4.] Postglacial

***Ditrichum tortile* (Schrad.) Lindb.**

- 1915 *Ditrichum tortile*. Reid, C. and E. M. The Pliocene Floras of the Dutch-Prussian Border. [Med. van de Rijksopspor. van Delfstoffen, No. 6, p. 53.] Pliocene

Note. With fragment of seta.

***Distichium* Bry. eur.**

***Distichium capillaceum* (Sw.) Bry. eur.**

- 1900 *Distichium capillaceum*. Penhallow, D. P. Canadian Pleistocene Flora of the Don Valley. [Rep. of 70 th Meeting of Brit. Assoc., Bradford, Sept., 1900, Pt. II, p. 335.] Pleistocene
- 1903 *Distichium capillaceum*. Range, Paul. Das Diluv. von Lübeck und seine Dryastone. [Zeitschr. f. Naturwiss., LXXVI, p. 253.] Diluvial
- 1907 *Swartzia montana* Lindb. Host, N. O. Preglaciala Dryasförande nära Ystad. [Geol. Fören. Förh., XXIX, p. 232.] Preglacial
- 1909 *Swartzia montana* Lindb. Hartz, N. Bidr. til Danmarks tertiære Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 261.] Interglacial
- 1910 *Swartzia montana* Lindb. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.] Diluvial
- 1912 *Distichium capillaceum*. Dixon, H. N., in Warren, S. H. A late Glacial stage in the Lea Valley. [Quart. Journ. Geol. Soc., LXVIII, p. 231.] Late glacial
- 1914 *Distichium capillaceum*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 248.] Diluvial
- 1914 *Distichium capillaceum*. Weber, C. A. Die Mammutflora von Borna. [Abh. nat. Ver. Bremen, XXIII, Heft I, p. 15.] Glacial
- 1920 *Distichium capillaceum*. Baker, Frank C. The Life of the Pleistocene or Glacial period. [Univ. of Illinois, Bull. XVII, pp. 334, 335, 377.] Glacial

Note. The text reads: —

Dichelyma capillaceum (see *Distichium capillaceum*)

Distichium (*Dichelyma*) *capillaceum*. As both species occur at the present day in the U. S. A., there is nothing to indicate which name is the species intended.

Ceratodon Brid.**Ceratodon purpureus (L.) Brid.**

- 1898 *Ceratodon purpureus*. Andersson, Gunnar. Stud. öfver Finlands Kvartärflora. [Bull. de la Commission géol. de Finlande, Tome 2, No. 8, p. 136.] Quaternary
- 1902 *Ceratodon purpureus*. Hartz, N. Bidrag til Danmarks geol. Undersøgelse, II Raekke, No. 11, p. 15.] Late glacial
- 1909 *Ceratodon purpureus*. Hartz, N. Bidr. til Danmarks tertiære Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 260.] Interglacial
- 1910 *Ceratodon purpureus*. Hesselbo, A. Mosreste fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 108.] Diluvial
- 1912 ? *Ceratodon purpureus*. Dixon, H. N. in Warren, S. H., A late Glacial stage in the Lea Valley. [Quart. Journ. Geol. Soc., LXVIII, p. 231.] Late glacial
- 1914 *Ceratodon purpureus* var. *paludosus* Warnst. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 248.] Diluvial

Blindia Bry. eur.**Blindia acuta (Huds.) Bry. eur.**

- 1910 *Blindia acuta* var. *trichodes* Braithw. Dixon, H. N. Some "Neolithic" Moss remains from Fort William. [Ann. Scott. Nat. Hist., 1910, p. 103.] Postglacial
- 1912 *Blindia acuta*. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Gesellsch. Freiburg i. B., XIX, p. 89.] Glacial

Dicranella Schimp.**Dicranella cerviculata (Hedw.) Schimp.**

- 1914 *Dicranella cerviculata*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math., et nat., Sér. B, No. 2 B, p. 248.] Diluvial

Dicranella squarrosa (L.) Schimp.

- 1914 *Dicranella squarrosa*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 88.] Diluvial

Dicranella sp.

- 1853 *Dicranum simplex* Goepp. & Menge. Ueber die Bernsteinflora. [Monatsber. d. Berliner Akad., 1853, p. 458.] Amber
- Note. Compared by the authors to *Dicranum Schreberi* (Dicranella).

- 1907 *Dicranella* sp. Hartmann, F. Die Fossile Flora Diluvial von Ingramsdorf. Inaug. Dissert. Breslau, 1907, p. 14.

Oreoweisia De Not.

Oreoweisia serrulata (Funck) De Not.

- 1912 *Oreoweisia serrulata*. Stark, P. Beitr. zur Kenntn. Glacial der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Gesellsch. Freiburg i. B., XIX, p. 88.]

Dichodontium Schimp.

Dichodontium pellucidum (L.) Schimp.

- 1904 *Dichodontium pellucidum*. Bell, A. M. Implementiferous Sections at Wolvercote (Oxfordshire). [Quart. Journ. Geol. Soc., LX, p. 124.] Late glacial
- 1910 *Dichodontium pellucidum*. Dixon, H. N. Some "Neolithic" Moss remains from Fort William. [Ann. Scott. Nat. Hist., 1910, p. 103.] Postglacial
- 1923 *Dichodontium pellucidum* var. *fagimontanum* Schimp. Baumberger, E., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz; geotechn. Ser., Lief. 8, p. 333.] Quaternary

Dichodontium subpellucidum (Goepp. & Menge)

- 1853 *Dicranum subpellucidum* Goepp. & Menge in Goepp., H. R. Ueber die Bernsteinflora. [Monatsber. d. Berliner Akad., 1853, p. 458.] Amber

Dicranoweisia Lindb.

Dicranoweisia crispula (Hedw.) Lindb.

- 1912 *Dicranoweisia crispula*. Stark, P. Beitr. zur Kenntn. der eiszeitl. Fl. und Fauna Badens. [Ber. naturforsch. Gesellsch. Freiburg i. B., XIX, p. 88.] Glacial

Oncophorus Brid.

Oncophorus virens (Sw.) Brid.

- 1910 *Oncophorus virens*. Hesselbo, A. Mosrester fra Diluviet ved Skaerumbhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.] Diluvial
- 1912 *Oncophorus virens*. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Gesellsch. Freiburg i. B., XIX, p. 88.] Glacial

Dicranum Hedw.

Dicranum Bergeri Bland.

- 1912 *Dicranum Bergeri* (as *Dicranella Bergeri*, lapsu calami). Stark, P. Beitr. zur Kenntn. der eis-

zeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Gesellsch. Freiburg i. B., XIX, p. 89.]

Dicranum Bonjeani De Not.

- 1909 **Dicranum Bonjeani**. Hartz, N. Bidr. til Danmarks tertiaere Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 260.] Interglacial
- 1910 **Dicranum Bonjeani**. Dixon, H. N. Some "Neolithic" Moss remains from Fort William. [Ann. Scott. Nat. Hist., 1910, p. 103.] Postglacial

Dicranum congestum Brid.

- 1910 **Dicranum congestum**. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.] Diluvial

Dicranum fuscescens Turn.

- 1853 **Dicranum fuscescens**. Goeppert, H. R. Ueber die Bernsteinflora. [Monatsber. d. Berliner Akad., 1853, p. 458.] Amber
- Note. "Von *D. fuscescens* nicht zu unterscheiden". Goepp. l. c.

Dicranum Mühlenbeckii Bry. eur.

- 1912 **Dicranum Mühlenbeckii** (as *Dicranella, lapsu calami*). Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Gesellsch. Freiburg i. B., XIX, p. 88.] Glacial

Dicranum parietinum.

- 1909 **Dicranum parietinum**. Hartz, N. Bidr. til Danmarks tertiaere Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 260.] There is no moss known of this name, and an error is presumable; possibly *Hylocomium parietinum* is intended.

Dicranum Sauteri Bry. eur.

- 1912 **Dicranum Sauteri** (as *Dicranella, lapsu calami*). Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Gesellsch. Freiburg i. B., XIX, p. 89.] Glacial

Dicranum scoparium (L.) Hedw.

- 1909 **Dicranum scoparium**. Hartz, N. Bidr. til Danmarks tertiaere Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 260.] Interglacial
- 1912 **Dicranum scoparium**. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Gesellsch. Freiburg i. B., XIX, p. 116.] Glacial

- 1914 *Dicranum scoparium* var. *alpestre* Milde. Zmuda, Diluvial
A. J. Fossile Flora des Krakauer Diluviums. [Bull.
int. Acad. Sci. Cracovie d. sc. math. et nat.,
Sér. B., No. 2B, p. 248.]

***Dicranum Scottianum* Turn.**

- 1910 *Dicranum Scottianum*. Dixon, H. N. Some "Neo- Postglacial
lithic" Moss remains from Fort William. [Ann.
Scott. Nat. Hist., 1910, p. 105.]

***Dicranum strictum* Schleich.**

- 1911 *Dicranum strictum* ? Dixon, H. N. in Lewis, F. J. Iceland
The Plant Remains in the Scottish Peat Mosses. peat; recent
Part IV. [Trans. Roy. Soc. Edinb., XLVII, p. 830.]
Note. Almost certainly this species; but the
specimen was unfortunately lost in the post before
the determination was confirmed.

***Dicranum subflagellare* Goepp. & Menge.**

- 1853 *Dicranum subflagellare*. Goepp. & Menge in Goepp., Amber
H. R. Ueber die Bernsteinflora. [Monatsber. d.
Berliner Akad., 1853, p. 458.]
Note. The authors say "cf. *D. flagellare*".
Syn. *Dicranites subflagellare* Caspary & Klebs,
Flora d. Bernsteins. [Abh. Kgl. preuss. geol.
Landesanst., N. F., Heft 4, p. 55, t. VIII, f. 47;
1903.] There seems no adequate ground for re-
moving this from *Dicranum*.

***Dicranum subpellucidum* Goepp. & Menge.**

cf. *Dichodontium subpellucidum*.

***Dicranum subscoparium* Goepp. & Menge.**

- 1853 *Dicranum subscoparium*. Goepp. & Menge in Goepp. Amber
pert. H. R. Ueber die Bernsteinflora. [Monatsber.
d. Berliner Akad., 1853, p. 458.]
Note. The authors say "cf. *D. scoparium*".

***Dicranum* spp. undetermined.**

- 1897 *Dicranum* sp. (*Eudicranum*). Beck, R. und Weber, Diluvial
C. A. Ueber ein Torflager des sächsisch.
Erzgebirges. [Zeitschr. d. Deutsch. geol. Gesellsch.,
XLIX, p. 666.]
1898 *Dicranum* sp. Andersson, Gunnar. Stud. öfver Quaternary
Finlands Kvartärflora. [Bull. de la Com-
mission géol. de Finlande, Tome 2, No. 8, p. 136.]

***Dicranites* Klebs.**

- 1903 *Dicranites* gen. nov. Klebs in Caspary, Fl. d.
Bernsteins [Abh. Kgl. preuss. geol. Landesanst.,
N. F., Heft 4, p. 52; 1903.]

Klebs gives no diagnosis of this genus, but states that it consists of species not certainly referable to any existing species, while clearly belonging to Dicranaceae in the widest sense.

Dicranites Casparyi Klebs.

- 1903 *Dicranites Casparyi* Klebs, op. et loc. cit., t. VII, Amber f. 42—45.

Compared with such erect-leaved forms as *Dicranum Scottianum*, and *Campylopus flexuosus*. The leaf apex figured, with a few short teeth, does not suggest a species of this alliance at all.

Dicranites obtusifolius Casp. & Klebs.

- 1903 *Dicranites obtusifolius* Casp. & Klebs, op. cit., Amber p. 54, t. VII, f. 46.

The form of the leaf with toothed sheathing base strongly suggests *Eucladium verticillatum*; but the leaf apex is figured as rough, and described as "an der stumpfen Spitze sägezähnig".

Dicranites subflagellare Caspary.

cf. *Dicranum subflagellare*.

Dicranodontium Bry. eur.

Dicranodontium longirostre (Starke) Bry. eur.

- 1912 *Dicranodontium longirostre* var. *alpinum* Milde. Glacial Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Gesellsch. Freiburg i. B., XIX, p. 89.]

Fissidentaceae.

Fissidens Hedw.

Fissidens adiantoides (L.) Hedw.

- 1910 *Schistophyllum adiantoides* Brid. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.] Quaternary

Fissidens cristatus Wils.

- 1923 *Fissidens decipiens* De Not. Baumberger, E., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz., geotechn. Ser., Lief. 8, p. 333.] Quaternary

Fissidens julianus Sav.

- 1898 *Schistophyllum julianum* (Sav.) Lindb. Andersson, Gunnar. Stud. öfver Finlands Kvartärflora. Quaternary

[Bull. de la Commission géol. de Finlande, Tome 2, No. 8, p. 138.]

Fissidens osmundoides (Sw.) Hedw.

- 1910 *Fissidens osmundoides*. Dixon, H. N. Some "Neolithic" Moss remains from Fort William. [Ann. Scott. Nat. Hist., 1910, p. 104.] Postglacial
 1912 *Fissidens osmundoides*. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Gesellsch. Freiburg i. B., XIX, p. 89.] Glacial
 1924 *Fissidens osmundoides*. Beyle, M. Ueber einige Ablagerungen fossiler Pflanzen der Hamburger Gegend. Dritter Teil. [Mitteil. aus dem Mineralog.-Geol. Staatsinstitut, Hamburg, Heft VI, p. 7.]

Fissidens taxifolius (L.) Hedw.

- 1923 *Fissidens taxifolius*. Baumberger, E., etc. Die diluv. Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, pp. 145, 333.] Quaternary

Pottiaceae.

Hymenostomum R. Br.

Hymenostomum microstomum (Hedw.) R. Br.

cf. *Muscites confertus*. (*Hymenostomum trichostomum* Goepp., Douin, les Mousses et les Hepatiques Fossiles, p. 114, is a lapsus calami for *H. microstomum*).

Weisia Hedw.

Weisia conferta Schimp.

- 1845 *Muscites confertus* Goepp. & Ber. Die im Bernstein befindlichen organ. Reste der Vorwelt, I, Abt. I, p. 112; t. VI, figs. 29—31. Amber
 1869 *Weisia conferta* Schimper, Traité de Pal. Végét. I, p. 243.

Note. Caspary writes that he has not examined the specimen, but from the description and figures he is inclined to think it the same thing as *Dicranites Casparyi* Klebs. The relation to *Weisia* seems very doubtful.

Gymnostomum Hedw.

Gymnostomum calcareum Bry. germ.

- 1923 *Gymnostomum calcareum*. Baumberger, E., etc. Die diluv. Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, p. 333.] Quaternary

Gymnostomum ferrugineum Ludw.

cf. *Sphagnum Ludwigii*.

Eucladium Bry. eur.**Eucladium verticillatum** (L.) Bry. eur.

- 1925 *Eucladium verticillatum*. Adam, Boros. Two fossil Recent tufa species of Mosses from the Diluvial Lime Tufa of Hungary. [Bryologist, XXVIII, p. 32.]

Trichostomum Hedw.**Trichostomum substrictum** Goepp. & Menge.

- 1853 *Trichostomum substrictum* Goepp. & Menge. Ueber die Bernsteinflora. [Monatsber. d. Berliner Akad., 1853, p. 458.]

Note. Compared by the authors with "*Trich. strictum*"; but, as Schimper remarks, they do not even say whether they refer to *T. strictum* Sw. or *T. strictum* Bry. eur. The affinity is very doubtful.

Trichostomum subpolystichum Goepp. & Menge.

- 1853 *Trichostomum subpolystichum* Goepp. & Menge op. Amber et loc. cit.

Note. Compared by the authors with "*Trich. polystichum*". No such moss is known. Schimper suggests a slip for *T. polyphyllum* (Ptychomitrium); but a moss in amber is not likely to have a very close affinity with a purely rupestral species such as this.

Tortella Limpr.**Tortella fragilis** (Hook. f. & Wils.) Limpr.

- 1909 *Mollia fragilis* Lindb. Hartz, N. Bidrag til Danmarks tertiære Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 261.]

Tortella inclinata (Hedw. f.) Limpr.

- 1904 *Tortella inclinata*. Weber, C. A., in Müller, G. Preglacial und Weber. Ueber eine fröhdiluviale Flora bei Lüneburg. [Abh. Kgl. preuss. geol. Landesanstalt und Bergakad., Heft 40, p. 15.]

Tortella tortuosa (L.) Limpr.

- 1902 *Mollia tortuosa* Lindb. Hartz, N. Bidr. til Danmarks seniglacial Flora og Fauna. [Danmarks geol. Undersøgelse, II Raekke, No. 11, p. 11.] Late glacial
- 1910 *Mollia tortuosa* Lindb. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.] Quaternary
- 1914 *Tortella tortuosa*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 248.] Diluvial

Didymodon Hedw.

Didymodon alpigena Vent.

- 1912 *Didymodon alpigena*. Stark, P. Beitr. zur Kenntn. Glacial
der eiszeitlich. Fl. und Fauna Badens. [Ber. na-
turforsch. Gesellsch. Freiburg i. B., XIX, p. 89.]

Didymodon rigidulus Hedw.

- 1911 *Didymodon rigidulus*. Stoller, J. Beitr. zur Kenntn. Diluvial
der diluv. Flora Norddeutschlands. [Jahrb.
d. Kgl. preuss. geol. Landesanst., XXIX, p. 123.]

Didymodon rubellus (Hoffm.) Bry. eur.

- 1909 *Barbula rubella* Lindb. Hartz, N. Bidr. til Dan- Interglacial
marks tertiaere . . . Flora. [Danmarks geol. Un-
dersøgelse, II Raekke, No. 20, p. 260.]
1910 *Barbula rubella* Lindb. Hesselbo, A. Mosrester Quaternary
fra Diluviet ved Skaerumhede. [Danmarks geol.
Undersøgelse, II Raekke, No. 25, p. 106.]
1912 *Barbula rubella* Lindb. Dixon, H. N., in Warren, Late glacial
S. H. A late Glacial stage in the Lea Valley.
[Quart. Journ. Geol. Soc., LXVIII, p. 231.]

Didymodon tophaceus (Brid.) Jur.

- 1922 *Didymodon tophaceus*. Adám, Boros. Magyar Bo- Recent tufa
tanikai Lapok, Budapest, p. 71.
1925 *Didymodon tophaceus*. Adám, Boros. Two fossil Recent tufa
species of Mosses from the Diluvial Lime Tufa
of Hungary. [Bryologist, XXVIII, 29.]

Barbula Hedw.

Barbula fallax Hedw.

- 1913 *Barbula fallax*. Travis, C. B. and W. G. On plant Post-glacial
remains in post-glacial gravels at Seaforth, Liver-
pool. [Lancashire Naturalist, 1913, p. 50.]

Barbula icmadophila Schimp.

- 1912 *Barbula icmadophila*. Stark, P. Beitr. zur Kenntn. Glacial
der eiszeitlich. Fl. und Fauna Badens. [Ber. na-
turforsch. Gesellsch. Freiburg i. B., XIX, p. 89.]

Barbula paludosa Schleich.

- 1912 *Barbula paludosa*. Stark, P. Beitr. zur Kenntn. Glacial
der eiszeitlich. Fl. und Fauna Badens. [Ber. na-
turforsch. Gesellsch. Freiburg i. B., XIX, p. 89.]

Barbula subcanescens Goepp. et Ber.

cf. *Muscites apiculatus* Goepp. et Ber.

Phascum L.

Phascum cuspidatum Goepp.

- 1853 *Phascum cuspidatum* Goepp., H. R. Ueber die Amber
Bernsteinflora. [Monatsber. d. Berliner Akad.,
1853, p. 458.]

Note. Schimper considers the identification
as doubtful.

Desmatodon Brid.**Desmatodon latifolius** (Hedw.) Bry. eur.

- 1914 *Desmatodon latifolius* var. *muticus* Brid. Weber, Glacial
C. A. Die Mammutflora von Borna. [Abh. Nat.
Ver. Bremen, XXIII, Heft I, p. 16.]

Tortula Hedw.**Tortula norvegica** (Web.) Wahl.

- 1903 *Tortula aciphylla* Hartm. Range, Paul. Das Diluv. Diluvial
von Lübeck und seine Dryastone. [Zeitschr. f.
Naturwiss., LXXVI, p. 254.]
- 1910 *Tortula norvegica*. Hesselbo, A. Mosrester fra Quaternary
Diluviet ved Skaerumhede. [Danmarks geol. Un-
dersøgelse, II Raekke, No. 25, p. 106.]
- 1912 *Tortula aciphylla* var. *mucronata* Sendtn. Dixon, Late glacial
H. N., in Warren, S. H., A late Glacial stage in
the Lea Valley. [Quart. Journ. Geol. Soc., LXVIII,
p. 231.]
- 1914 *Tortula aciphylla* Hartm. Weber, C. A. Die Mam- Glacial
mutflora von Borna. [Abh. Nat. Ver. Bremen,
XXIII, Heft I, p. 16.]

Tortula ruralis (L.) Ehrh.

- 1907 *Tortula ruralis*. Holst, N. O. Preglaciala Dryas- Preglacial
förande nara Ystad. [Geol. Fören. Förh.,
XXIX, p. 232.]
- 1910 *Tortula ruralis*. Hesselbo, A. Mosrester fra Quaternary
Diluviet ved Skaerumhede. [Danmarks geol. Under-
søgelse, II Raekke, No. 25, p. 106.]
- 1914 *Tortula ruralis*. Weber, C. A. Die Mammutflora Glacial
von Borna. [Abh. Nat. Ver. Bremen, XXIII,
Heft I, p. 16.]

Tortula species.

- 1914 *Tortula* sp. Weber, C. A. Die Mammutflora von Glacial
Borna. [Abh. Nat. Ver. Bremen, XXIII, Heft I,
p. 16.]

Encalypta Schreb.**Encalypta alpina** Smith.

- 1910 *Leersia alpina* Lindb. Hesselbo, A. Mosrester fra Quaternary
Diluviet ved Skaerumhede. [Danmarks geol. Un-
dersøgelse, II Raekke, No. 25, p. 106.]

Encalypta rhabdocarpa Schwaegr.

- 1902 *Encalypta rhabdocarpa*. Hartz, N. Bidr. til Dan- Late glacial
marks senglaciale Flora og Fauna. [Danmarks
geol. Undersøgelse, II Raekke, No. 11, p. 11.]
- 1909 *Leersia rhabdocarpa* Lindb. Hartz, N. Bidr. til Interglacial
Danmarks tertiaere Flora. [Danmarks geol.
Undersøgelse, II Raekke, No. 20, p. 261.]

- 1910 *Encalypta rhabdocarpa*? Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.] Quaternary
- 1912 *Encalypta rhabdocarpa*. Dixon, H. N., in Warren, S. H. A late Glacial stage in the Lea Valley. [Quart. Journ. Geol. Soc., LXVIII, p. 231.] Late glacial
- 1912 *Encalypta rhabdocarpa*. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. u. Fauna Badens. [Ber. naturforsch. Gesellsch. Freiburg i. B., XIX, p. 89.] Glacial

Grimmiaceae.

Glyphomitrium Brid.

Glyphomitrium Cockerelleae Britt. et Hollick.

- 1907 *Glyphomitrium Cockerelleae* Britt. & Hollick, American Fossil Mosses, in Bull. Torr. Bot. Cl. 34: 140; tab. 9, figs. 6, 6a. Cum fructu. Tertiary
Shales,
Florissant,
Colorado

Coscinodon Spreng.

Coscinodon humilis Milde.

- 1912 *Coscinodon humilis*. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Faun. Badens. [Ber. naturforsch. Gesellsch. Freiburg i. B., XIX, 89.] Glacial

Grimmia Ehrh.

Grimmia alpicola Sw.

- 1912 *Schistidium alpicola* var. *rivulare* Limpr. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Gesellsch. Freiburg i. B., XIX, p. 89.] Glacial

Grimmia anodon Bry. eur.

- 1912 *Grimmia anodon*. Stark, P., op. et loc. cit. Glacial

Grimmia apocarpa (L.) Hedw.

- 1910 *Grimmia apocarpa*. Hesselbo, A. Mosrester fra Diluviet ved Skaerumkede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 108.] Quaternary

Grimmia elatior Bruch.

- 1912 *Grimmia elatior*. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Gesellsch. Freiburg i. B., XIX, p. 89.] Glacial

Grimmia elongata Kaulf.

- 1912 *Grimmia elongata*. Stark, P., op. et loc. cit. Glacial

Grimmia ericoides Lindb.cf. *Racomitrium canescens*.**Grimmia funalis** (Schwaegr.) Schimp.1912 *Grimmia funalis*. Stark, P., op. et loc. cit. Glacial**Grimmia hypnoides** Lindb.cf. *Racomitrium lanuginosum*.**Grimmia incurva** Schwaegr.1912 *Grimmia incurva*. Stark, P., op. et loc. cit. Glacial**Grimmia subelongata** Goepp. et Menge.1853 *Grimmia subelongata* Goepp. & Menge in Goepp., Amber
H. R., Ueber die Bernsteinflora. [Monatsber. d.
Berliner Akad., 1853, p. 459.]Note. Compared with *G. elongata* Kaulf. Schimper rightly remarks that it is very doubtful if any species allied to *G. elongata* would occur in the pine forests and under the conditions where amber was formed.**Grimmia torquata** Hornsch.1912 *Grimmia torquata*. Stark, P. Beitr. zur Kenntn. Glacial
der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Gesellsch. Freiburg i. B., XIX, p. 89.]**Grimmia species.**

- 1908 *Grimmia* sp. Dixon, H. N., in Lewis, F. J. The Recent
Plant Remains in the Scottish Peat Mosses.
Part III. [Trans. Roy. Soc. Edinb., XLVI, p. 44.]
- 1910 *Grimmia* sp. Dixon, H. N. Some "Neolithic" Moss Postglacial
remains from Fort William. [Ann. Scott. Nat.
Hist., 1910, p. 104.]

Note. Of the *trichophylla* type, but with cells nearly all incrassate and sinuose to the base. Probably either *G. Mühlenbeckii* or *G. robusta*.**Racomitrium** Brid.**Racomitrium affine** Lindb.1910 *Racomitrium heterostichum* var. Dixon, H. N. Postglacial
Some "Neolithic" Moss remains from Fort William. [Ann. Scott. Nat. Hist., 1910, p. 104.]**Racomitrium canescens** (Weis) Brid.1910 *Racomitrium canescens*. Dixon, H. N., op. et Postglacial
loc. cit.

- 1910 *Grimmia ericoides* Lindb. Hesselbo, A. Mosrester Quaternary
fra Diluviet ved Skaerumhede. [Danmarks geol.
Undersøgelse, II Række, No. 25, p. 108.]
- 1922 *Rhacomitrium canescens*. Jessen, Knud, og Ras- Recent
mussen, R. Et Profil Gennem en Tørvemose paa
Faerørne, p. 12.

***Rhacomitrium fasciculare* (Schrad.) Brid.**

- 1922 *Rhacomitrium fasciculare*. Jessen, Knud, og Ras- Recent
mussen, R. Et Profil Gennem en Tørvemose paa
Faerørne, p. 12.

***Rhacomitrium heterostichum* (Hedw.) Brid.**

- 1922 *Rhacomitrium heterostichum*. Jessen, Knud, og Recent
Rasmussen, R., op. et loc. cit.

***Rhacomitrium hypnoides* (L.) Lindb.**

- 1908 *Rhacomitrium lanuginosum* Brid. Dixon, H. N., Recent
in Lewis, F. J. The Plant Remains in the Scottish
Peat Mosses. Part III. [Trans. Roy. Soc. Edinb.,
XLVI, pp. 40, 48, 55.]
- 1910 *Grimmia hypnoides* Lindb. Hesselbo, A. Mosrester Diluvial
fra Diluviet ved Skaerumhede. [Danmarks geol.
Undersøgelse, II Række, No. 25, p. 108.]
- 1914 *Rhacomitrium hypnoides* Lindb. Zmuda, A. J. Fos- Diluvial
sile Flora des Krakauer Diluviums. [Bull. int.
Acad. Sci. Cracovie d. sc. math. et nat., Sér.
B, No. 2 B, p. 248.]
- 1924 *Rhacomitrium lanuginosum* Brid. Burrell, W. H. Recent
Pennine Peat. [The Naturalist, 1924, p. 148,
tab. X.]

***Rhacomitrium patens* (Brid.)**

- 1912 *Dryptodon patens* Brid. Stark, P. Beitr. zur Glacial
Kenntn. der eiszeitlich. Fl. und Fauna Badens.
[Ber. naturforsch. Gesellsch. Freiburg i. B., XIX,
p. 89.]

Orthotrichaceae.

***Anoetangium* Hedw.**

***Anoetangium compactum* Schwaegr.**

- 1912 *Anoetangium compactum*. Stark, P. Beitr. zur Glacial
Kenntn. der eiszeitlich. Fl. und Fauna Badens.
[Ber. naturforsch. Gesellsch. Freiburg i. B., XIX,
p. 88.]

***Amphidium* Nees.**

***Amphidium lapponicum* (Hedw.) Schimp.**

- 1912 *Amphidium lapponicum*. Stark, P. op. cit., p. 89. Glacial

Zygodon Hook. & Tayl.**Zygodon viridissimus** (Dicks.) R. Br.

- 1913 *Zygodon viridissimus*. Travis, C. B. and W. G. Postglacial
On plant remains in post-glacial gravels at Seaforth, Liverpool. [Lancashire Naturalist, 1913, p. 50.]

Ulota Mohr.**Ulota curvifolia** (Wahl.) Brid.

- 1912 *Ulota curvifolia*. Stark, P. Beitr. zur Kenntn. Glacial
der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Gesellsch. Freiburg i. B., XIX, p. 89.]

Orthotrichum Hedw.**Orthotrichum diaphanum** (Gmel.) Schrad.

- 1912 *Orthotrichum diaphanum*. Dixon, H. N., in Warren, Late glacial
S. H. A late Glacial stage in the Lea Valley.
[Quart. Journ. Geol. Soc., LXVIII, p. 231.]

Orthotrichum species.

- 1907 *Orthotrichum* sp. Hartmann, F. Die Fossile Flora Diluvial
von Ingramsdorf. Inaug. Dissert. Breslau, p. 25.

Splachnaceae.**Splachnum** L.**Splachnum ampullaceum** L.

- 1912 *Splachnum ampullaceum*. Stark, P. Beitr. zur Glacial
Kenntn. der eiszeitlich. Fl. und Fauna Badens.
[Ber. naturforsch. Gesellsch. Freiburg i. B., XIX, p. 89.]

Splachnum sphaericum (L. f.) Sw.

- 1912 *Splachnum sphaericum*. Stark, P., op. et loc. cit. Glacial

Bryaceae.**Leptobryum** Wils.**Leptobryum pyriforme** (L.) Wils.

- 1910 *Leptobryum pyriforme*. Hesselbo, A. Mosrester Quaternary
fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.]

Pohlia Hedw.**Pohlia commutata (Schimp.) Lindb.**

- 1910 *Pohlia commutata*. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.] Quaternary
- 1912 *Webera commutata* Schimp. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Gesellsch. Freiburg i. B., XIX, p. 89.] Glacial

Pohlia cruda (L.) Lindb.

- 1902 *Pohlia cruda*. Hartz, N. Bidr. til Danmarks sennglaciale Flora og Fauna. [Danmarks geol. Undersøgelse, II Raekke, No. 11, p. 11.] Late glacial
- 1912 *Webera cruda* (L.) Bruch. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Gesellsch. Freiburg i. B., XIX, p. 89.] Glacial

Pohlia cucullata (Schwaegr.) Bruch

- 1910 *Pohlia cucullata*. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.] Quaternary
- 1912 *Webera cucullata* (Schwaegr.) Schimp. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Gesellsch. Freiburg i. B., XIX, p. 89.] Glacial

Pohlia longicolla (Sw.) Lindb.

- 1912 *Webera longicolla* (Sw.) Hedw. Stark, P., op. et loc. cit. Glacial

Pohlia Ludwigii (Spreng) Lindb.

- 1912 *Webera Ludwigii* Schimp. Stark, P., op. et loc. cit. Glacial

Pohlia nutans (Schreb.) Lindb.

- 1902 *Pohlia nutans*. Hartz, N. Bidr. til Danmarks sennglaciale Flora og Fauna. [Danmarks geol. Undersøgelse, II Raekke, No. 11, p. 15.] Late glacial
- 1904 *Pohlia nutans*. Bell, A. M. Implementiferous Sections at Wolvercote (Oxfordshire). [Quart. Journ. Geol. Soc., LX, p. 124.] Late glacial
- 1909 *Pohlia ?nutans*. Hartz, N. Bidr. til Danmarks tertiaere Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 261.] Interglacial
- 1910 *Pohlia nutans*. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.] Quaternary
- 1913 *Webera nutans* Hedw. Travis, C. B. and W. G. On plant remains in post-glacial gravels at Seaforth, Liverpool. [Lancashire Naturalist, 1913, p. 50.] Postglacial
- 1914 *Pohlia nutans*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2B, p. 248.] Diluvial

- 1917 *Webera nutans* Hedw. Weber, C. A. Die Pflanzenwelt des Rabutzer Beckentons [Bot. Jahrb. Syst., LIV, Beibl. Nr. 120, p. 14.]

***Pohlia sphagnicola* (Bry. eur.) Lindb.**

- 1912 *Webera sphagnicola* Schimp. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Gesellsch. Freiburg i. B., XIX, p. 89.] Glacial

***Mniobryum* Limpr.**

***Mniobryum albicans* (Wahl.) Limpr.**

- 1888 *Webera albicans* Schimp. Reid, C. and Ridley, H. N. Fossil Arctic Plants from Hoxne, in Suffolk. [Geol. Mag., Decade III, Vol. V, p. 444.] Glacial
- 1904 *Mniobryum albicans*. Bell, A. M. Implementiferous Sections at Wolvercote (Oxfordshire). [Quart. Journ. Geol. Soc., LX, p. 124.] Lateglacial
- 1910 *Pohlia albicans* Lindb. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.] Quaternary
- 1912 *Mniobryum albicans* var. *glaciale* Limpr. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Gesellsch. Freiburg i. B., XIX, p. 89.] Glacial
- 1914 *Mniobryum albicans*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2B, p. 248.] Diluvial

***Anomobryum* Schimp.**

***Anomobryum concinnatum* (Sprence) Lindb.**

- 1912 *Anomobryum concinnatum*. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Gesellsch. Freiburg i. B., XIX, p. 89.] Glacial

***Bryum* Dill.**

***Bryum capillare* L.**

- 1912 *Bryum capillare*. Dixon, H. N. in Warren, S. H. A late Glacial Stage in the Lea Valley. [Quart. Journ. Geol. Soc., LXVIII, p. 231.] Late glacial

***Bryum cirratum* Hoppe et Hornsch.**

- 1910 *Bryum cirratum*. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.] Quaternary
- 1912 *Bryum cirratum*. Dixon, H. N. in Warren, S. H. A late Glacial stage in the Lea Valley. [Quart. Journ. Geol. Soc., LXVIII, p. 231.] Late glacial

Bryum crispulum Hampe.

- 1910 *Bryum crispulum*. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.] Quaternary

Bryum cyclophyllum (Schwaegr.) Bry. eur.

- 1910 *Bryum cyclophyllum*. Hesselbo, A., op. et loc. cit. Quaternary

Bryum Duvalii Voit.

- 1905 *Bryum ?Duvalii*. Neuweiler, E. Zur interglazialflora der Schweiz. Schieferkohlén. [Ber. d. Züricher Bot. Gesellsch., XV, p. 98.] Interglacial
- 1914 *Bryum ?Duvalii*. Weber, C. A. Die Mammutflora von Borna. [Abh. Nat. Ver. Bremen, XXIII, Heft 1, p. 17.] Glacial
- 1923 *Bryum Duvalii*. Baumberger, E., etc. Die diluvialen Schieferkohlén der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, p. 84.] Quaternary

Bryum elegans Nees.

- 1912 *Bryum elegans*. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Gesellsch. Freiburg i. B., XIX, p. 89.] Glacial

Bryum erythrocarpum Schwaegr.

- 1904 *Bryum erythrocarpum*. Bell, A. M. Implementiferous Sections at Wolvercote (Oxfordshire). [Quart. Journ. Geol. Soc., LX, p. 124.] Late glacial

Bryum intermedium Brid.

- 1912 *Bryum ?intermedium*. Dixon, H. N., in Warren, S. H. A late Glacial stage in the Lea Valley. [Quart. Journ. Geol. Soc., LXVIII, p. 231.] Late glacial

Bryum lacustre Brid.

- 1914 *Bryum lacustre*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B. No. 2B, p. 248.] Diluvial

Bryum microstegium Bry. eur.

- 1904 *Bryum cf. microstegium*. Weber, C. A., in Müller, G. und Weber. Ueber eine frühdiluviale Flora bei Lüneburg. [Abh. Kgl. preuss. geol. Landesanstalt und Bergakad., Heft 40, p. 16.] Preglacial

Bryum neodamense Itzigs.

- 1910 *Bryum neodamense* var. *ovatum* Lindb. and Arn. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.] Quaternary

- 1912 *Bryum neodamense*. Stark, P. Beitr. zur Kenntn. Glacial
der eiszeitlich. Fl. und Fauna Badens. [Ber.
naturforsch. Gesellsch. Freiburg i. B., XIX, p. 89.]

***Bryum pallens* Swartz.**

- 1888 *Bryum pallens*. Reid, C. and Ridley, H. N. Fossil Glacial
Arctic Plants from Hoxne, in Suffolk. [Geol.
Mag., Decade III, Vol. V, p. 444.]
- 1903 *Bryum pallens*. Range, Paul. Das Diluv. von Diluvial
Lübeck und seine Dryastone [Zeitschr. f.
Naturwiss., LXXVI, p. 253.]
- 1912 *Bryum pallens*. Dixon, H. N., in Warren, S. H. Late glacial
A late Glacial stage in the Lea Valley. [Quart.
Journ. Geol. Soc., LXVIII, p. 231.]
- 1913 *Bryum pallens*. Travis, C. B. and W. G. On Postglacial
plant remains in post-glacial gravels at Seaforth,
Liverpool. [Lancashire Naturalist, 1913, p. 50.]
- 1923 *Bryum pallens*. Baumberger, E., etc. Die diluvi- Quaternary
alen Schieferkohlen der Schweiz. [Beitr. Geol.
Schweiz, geotechn. Ser., Lief. 8, p. 521.]
- 1923 *Bryum pallens*. Gams, H. Interglacial bryophytes Interglacial
..... [B. 2, Geol. Karte d. Schweiz, Geotechn.
Ser., Lief. 8, p. 521.]

***Bryum Schleicheri* Schwaegr.**

- 1912 *Bryum Schleicheri* var. *latifolium* Schimp. Stark, P. Glacial
Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna
Badens. [Ber. naturforsch. Gesellsch. Freiburg i.
B., XIX, p. 89.]

***Bryum ventricosum* Dicks.**

- 1902 *Bryum ventricosum*. Hartz, N. Bidrag til Dan- Late glacial
marks senglacial Flora og Fauna. [Danmarks geol.
Undersøgelse, II Raekke, No. 11, p. 15.]
- 1903 *Bryum pseudo-triquetrum* Schwaegr. Range, Paul. Diluvial
Das Diluv. von Lübeck und seine Dryastone.
[Zeitschr. f. Naturwiss., LXXVI, p. 253.]
- 1909 *Bryum ventricosum*. Hartz, N. Bidr. til Dan- Interglacial
marks tertiaere Flora. [Danmarks geol. Un-
dersøgelse, II Raekke, No. 20, p. 260.]
- 1909 *Bryum ventricosum*. Nørregaard, E. M. Et senglac- Late glacial
ialt... Vandløb fra Dejbjerg Bakker. [Meddel.
fra Dansk geol. Foren., No. 15, p. 325.]
- 1910 *Bryum ventricosum*. Dixon, H. N. Some "Neoli- Postglacial
thic" Moss remains from Fort William. [Ann.
Scott. Nat. Hist., 1910, p. 104.]
- 1910 *Bryum ventricosum*. Hesselbo, A. Mosrester fra Quaternary
Diluviet ved Skaerumhede. [Danmarks geol. Un-
dersøgelse, II Raekke, No. 25, p. 106.]
- 1912 *Bryum ventricosum*. Dixon, H. N., in Warren, Late glacial
S. H. A late Glacial stage in the Lea Valley.
[Quart. Journ. Geol. Soc., LXVIII, p. 231.]
- 1914 *Bryum pseudotriquetrum* Schwaegr. Weber, C. A. Diluvial
des Krakauer Diluviums. [Bull. int. Acad. Sci.
Cracovie d. sc. math. et nat., Sér. B, No. 2 B,
p. 248.]

- 1914 *Bryum pseudotriquetrum* Schwaegr. Weber, C. A. Glacial
Die Mammutflora von Borna. [Abh. Nat. Ver.
Bremen, XXIII, Heft 1, p. 17.]

Bryum species.

- 1890 *Bryum* sp. Dawson, Sir Wm., and Penhallow, D. Pleistocene
P. On the Pleistocene Flora of Canada. [Bull.
Geol. Soc. Amer., I, p. 315.]
- 1902 *Bryum* sp. Hartz, N. Bidrag til Danmarks senglacial Late glacial
Flora og Fauna. [Danmarks geol. Undersøgelse, II Raekke, No. 11, p. 15.]
- 1904 *Bryum* sp. Weber, C. A. in Mueller, G. u. Weber. Preglacial
Ueber einer fröhdiluviale und vorglacielle Flora bei Lüneburg. [Abh. Kgl. preuss. geol. Landesanstalt und Bergakad., Heft 40, p. 16.]
- 1910 *Bryum* sp. Hesselbo, A. Mosrester fra Diluviet Quaternary
ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.]
- 1914 *Bryum* sp. Weber, C. A. Die Mammutflora von Glacial
Borna. [Abh. Nat. Ver. Bremen, XXIII, Heft 1, p. 17.]
- 1923 *Bryum* sp. Baumberger, E., etc. Die diluvialen Quaternary
Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, pp. 145, 333.]
- "*Bryon crispatum* Grand Eury ist Autophyllites furcatus Grand Eury." Jongmans, in Med. van de Rijksopspor. van Delfstoffen, No. 3 (1911), p. 441.

Mniaceae.

Mnium L.

Mnium affine Bland.

- 1898 *Mnium affine*. Andersson, Gunnar. Stud. öfver Quaternary
Finlands Kvartärflora. [Bull. de la Commission géol. de Finlande, Tome 2, No. 8, p. 137.]
- 1899 *Mnium affine*. Bertrand, C. E. Descr. d'un échantillon de charbon papyracé Pleistocene
[Ann. Soc. géol. du Nord, XXVIII, p. 190.]
- 1902 *Astrophyllum cuspidatum* (L.) Lindb. Hartz, N. Late glacial
Bidrag til Danmarks senglacielle Flora og Fauna. [Danmarks geol. Undersøgelse, II Raekke, No. 11, p. 11.]
- 1904 *Mnium affine*. Bell, A. M. Implementiferous Late glacial
Sections at Wolvercote (Oxfordshire). [Quart. Journ. Geol. Soc., LX, p. 124.]
- 1909 *Astrophyllum cuspidatum* (L.) Lindb. Hartz, N. Interglacial
Bidrag til Danmarks tertiære Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 260.]
- 1914 *Mnium affine* var. *integrifolium* Lindb. Zmuda, Diluvial
A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cravovie d. sc. math. et nat., Sér. B., No. 2B, p. 248.]

Mnium antiquorum Card et Dixon.

- 1915 **Mnium antiquorum** Card. & Dixon in Reid, Clement and E. M. The Pliocene Floras of the Dutch-Prussian Border. [Med. van de Rijksopspor. van Delfstoffen, No. 6, p. 52, Fig. 3.] See also Bryologist, XIX, p. 51 (1916). Pliocene

Mnium cinclidioides (Blytt) Hübén.

- 1897 **Mnium cinclidioides**. Beck, R., und Weber, C. A. Ueber ein Torflager des sächsisch. Erzgebirges. [Zeitschr. d. deutsch. geol. Ges., XLIX, p. 666.] Diluvial
- 1898 **Mnium cinclidioides**. Andersson, Gunnar. Stud. Finlands Kvartärflora. [Bull. de la Commission géol. de Finlande, Tome 2, No. 8, p. 137.] Quaternary
- 1912 **Mnium cinclidioides**. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. u. Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 89.] Glacial
- 1914 **Mnium cinclidioides**, Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 248.] Diluvial

Mnium curvatulum (Lindb.) Limpr.

- 1910 **Astrophyllum curvatulum** Lindb. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.] Quaternary

Mnium cuspidatum (L.) Leyss.

- 1909 **Astrophyllum silvaticum** Lindb. Hartz, N. Bidrag til Danmarks tertiære Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 260.] Interglacial
- 1910 **Astrophyllum silvaticum** Lindb. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.] Quaternary

Mnium hornum L.

- 1895 **Mnium hornum**. Gepp, A. Fossil plant-remains in peat. [Journ. of Bot., XXXIII, p. 181.] Recent sub-marine peat
- 1898 **Mnium hornum**. Andersson, Gunnar. Stud. öfver Finlands Kvartärflora. [Bull. de la Commission géol. de Finlande, Tome 2, No. 8, p. 137.] Quaternary
- 1910 **Mnium hornum**. Dixon, H. N. Some "Neolithic" Moss remains from Fort William. [Ann. Scott. Nat. Hist., 1910, p. 104.] Postglacial
- 1922 **Mnium hornum**. Jessen, Knud, og Rasmussen, R. Et Profil Gennem en Tørvemose paa Faerørne. [Danmarks geol. Undersøgelse, IV Raekke, No. 13, p. 12.] Recent

Mnium hymenophylloides Hübén.

- 1910 **Mnium hymenophylloides**. Sukačev, V. N. Sur la flore arctique près du village Demianskoe, gouv. Tobolsk. [Bull. Acad. Impér. Sci. St. Pétersbourg, 1910, p. 460, figs. 1-3.] Pleistocene

- 1910 *Astrophyllum hymenophylloides* (Hueben.) Lindb. Quaternary
Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 108.]
- 1914 *Mnium hymenophylloides*. Weber, C. A. Die Mammutflora von Borna. [Abh. Nat. Ver. Bremen, XXIII, Heft 1, p. 16.] Glacial
- 1918—20 *Mnium hymenophylloides*. Doctourowsky, V. S. Interglacial
and Kudriashev, V. Results of Russian studies on peat moors. [Reports on Peat, 4.]

***Mnium marginatum* (Dicks.) P. Beauv.**

- 1910 *Astrophyllum marginatum* (Dicks.) Lindb. Hesselbo, Quaternary
A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.]

***Mnium medium* Bry. eur.**

- 1909 *Astrophyllum medium* (Bry. eur.) Lindb. Hartz, N. Interglacial
Bidrag til Danmarks tertiaere Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 260.]
- Note. The author gives no indication of the characters by which he distinguishes it from *M. affine*. It was presumably not fruiting.

***Mnium punctatum* (L.) Hedw.**

- 1888 *Mnium punctatum*. Reid, Clement, and Ridley, Glacial
H. N. Fossil Arctic Plants from Hoxne, in Suffolk. [Geol. Mag., Dec. III, Vol. V, p. 444.]
- 1898 *Mnium punctatum*. Andersson, Gunnar. Stud. öfver Quaternary
Finlands Kvartärflora. [Bull. de la Commission géol. de Finlande, Tome 2, No. 8, p. 137.]
- 1905 *Mnium punctatum*. Neuweiler, E. Die prähistor. Pleistocene
Pflanzenreste Mitteleuropas... [Vierteljahr. Naturforsch. Ges. Zurich, L, Heft 6, p. 40.]
- 1911 *Mnium punctatum*. Dixon, H. N., in Lewis, F. J. Iceland
The plant remains in the Scottish Peat Mosses. peat; recent
Part IV. [Trans. Roy. Soc. Edinb., XLVII, p. 831 bis.]
- 1912 *Mnium punctatum* (or *M. subglobosum* Bry. eur.). Late glacial
Dixon, H. N., in Warren, S. H. A late Glacial stage in the Lea Valley. [Quart. Journ. Geol. Soc., LXVIII, p. 231.]
- 1914 *Mnium punctatum*. Weber, C. A. Die Mammutflora Glacial
von Borna. [Abh. Nat. Ver. Bremen, XXIII, Heft 1, p. 17.]
- 1923 *Mnium punctatum*. Baumberger, E., etc. Quaternary
Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz., geotechn. Ser., Lief. 8, pp. 145, 333.]

***Mnium riparium* Mitten.**

- 1914 *Mnium riparium*. Zmuda, A. J. Fossile Flora Diluvial
des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 248.]

Note. The identification, in the presumable absence of inflorescence, appears to me extremely doubtful.

Mnium rostratum Schrad.

- 1904 **Mnium rostratum**. Bell, A. M. Implementiferous Sections at Wolvercote (Oxfordshire). [Quart. Journ. Geol. Soc., LX, p. 124.] Late glacial
- 1912 **Mnium rostratum**. Dixon, H. N., in Warren, S. H. A late Glacial stage in the Lea Valley. [Quart. Journ. Geol. Soc., LXVIII, p. 231.] Late glacial

Mnium rugicum Laur.

- 1904 **Mnium rugicum**. Weber, C. A., in Mueller, G. und Weber. Ueber eine fröhdiluviale und vorglaciale Flora bei Lüneburg. [Abh. Kgl. preuss. geol. Landesanstalt und Bergakad., Heft 40, p. 16.] Preglacial
- 1912 **Mnium rugicum**. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Flora und Fauna Badens. [Ber. Naturforsch. Ges. Freiburg i. B., XIX, p. 26.] Glacial
- 1914 **Mnium rugicum**. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 248.] Diluvial

Mnium subglobosum Br. Eur.

- 1909 **Astrophyllum subglobosum** (Bry. eur.) Lindb. Hartz, N. Bidrag til Danmarks tertiaere Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 260.] Interglacial
- 1912 **Mnium subglobosum** (cf. *M. punctatum*).

Mnium undulatum (L.) Weis.

- 1905 **Mnium undulatum**. Neuweiler, E., Die prähistor. Pflanzenreste Mitteleuropas [Vierteljahr. Naturforsch. Ges. Zurich, L, Heft 6, p. 40.] Pleistocene
- 1909 **Astrophyllum undulatum** (L.) Lindb. Hartz, N. Bidrag til Danmarks tertiaere Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 260.] Interglacial

Mnium species.

- 1892 **Mnium** sp. Boulay, N. Flore pliocène du Mont-Dore, p. 44. Pliocene
- Note. According to the author the generic position is very doubtful. *Fissidens* and *Hypnum* are also suggested.

Cinclidium Sw.

Cinclidium arcticum Schimp.

- 1910 **Cinclidium arcticum**. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.] Quaternary

- 1914 *Cinclidium areticum*. Weber, C. A. Die Mammutflora von Borna. [Abh. Nat. Ver. Bremen, XXIII, Heft 1, p. 17.] Glacial

***Cinclidium latifolium* Lindb.**

- 1910 *Cinclidium latifolium*. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.] Quaternary

***Cinclidium stygium* Sw.**

- 1907 *Cinclidium stygium*. Dixon, H. N., in Lewis, F. J. Summary of Progress for 1907, p. 99. [Mem. Geol. Survey.] Peat
 1914 *Cinclidium stygium*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2B, p. 248.] Diluvial

***Cinclidium* species.**

- 1925 *Cinclidium* sp. Dixon, H. N. Moss Remains in Russian Peat. [Journ. of Bot., LXIII, p. 370.] Recent

Aulacomniaceae.

***Aulacomnium palustre* (L.) Schwaegr.**

- 1895 *Aulacomnium palustre*. Gepp, A. Fossil plant-remains in peat. [Journ. of Bot., XXXIII, p. 181.] Recent sub-marine peat
 1902 *Sphaerocephalus palustris* (L.) Lindb. Hartz, N. Bidrag til Danmarks senglaciale Flora og Fauna. [Danmarks geol. Undersøgelse, II Raekke, No. 11, p. 15.] Late glacial
 1903 *Aulacomnium palustre*. Range, Paul. Das Diluv. von Lübeck und seine Dryastone [Zeitschr. f. Naturwiss., LXXVI, p. 269.] Diluvial
 1904 *A. palustre*. Bell, A. M. Implementiferous Sections at Wolvercote (Oxfordshire). [Quart. Journ. Geol. Soc., LX, p. 124.] Late glacial
 1907 *A. palustre*. Dixon, H. N., in Lewis, F. J. Summary of Progress for 1907, p. 99. [Mem. Geol. Survey.] Peat
 1910 *Sphaerocephalus palustris* (L.) Lindb. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.] Quaternary
 1912 *A. palustre*. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 116.] Glacial
 1914 *A. palustre* var. *imbricatum* Bry. eur. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2B, p. 249.] Diluvial
 1917 *A. palustre*. Rudolph, K. Untersuch. über den Aufbau böhmisch. Moore. [Abh. k. k. zool.-bot. Ges. Wien, IX, p. 82.] Recent
 1917 *A. palustre*. Weber, C. A. Die Pflanzenwelt des Rabutzer Beckentons [Bot. Jahrb. Syst., LIV, Beibl. Nr. 120, p. 14.] Recent

- 1918—20 *A. palustre*. Docturowsky, V. S., and Kudriashev, V. Results of Russian studies on peat moors. [Reports on Peat, 4.] Interglacial
- 1922 *A. palustre*. Jessen, Knud, og Rasmussen, R. Et Profil Gennem en Tørvemose paa Faerørne. [Danmarks geol. Undersøgelse, IV Raekke, No. 13, p. 12.] Recent
- 1923 *A. ?palustre*. Baumberger, E., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, p. 334.] Quaternary
- 1924 *A. palustre*. Burrell, W. H. Pennine Peat. [The Naturalist, 1924, p. 148.] Recent

***Aulacomnium turgidum* Schwaegr.**

- 1910 *Aulacomnium turgidum*. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.] Quaternary
- 1914 *A. turgidum*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 249.] Diluvial

Meeseaceae.

***Paludella* Ehrh.**

***Paludella squarrosa* (L.) Brid.**

- 1896 *Paludella squarrosa*. Farneti, R. Ricerche di briol. palaeont. al periodo glaciale. [Atti del Istit. Bot. della Reale Univ. d. Pavia, Ser. 2, V, p. 53.] Glacial
- 1914 *P. squarrosa*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 249.] Diluvial
- 1918 *P. squarrosa*. Beyle, M. Ueber einige Ablagerungen fossiler Pflanzen der Hamburger Gegend. Zweiter Teil. [Jahrb. der Hamburg. wiss. Anst., XXXVI, p. 40.] Glacial
- 1925 *P. squarrosa*. Dixon, H. N. Moss Remains in Russian Peat. [Journ. of Bot., LXIII, p. 370.] Recent

***Amblyodon* P. Beauv.**

***Amblyodon dealbatus* (Dicks.) Beauv.**

- 1912 *Amblyodon dealbatus*. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 89.] Glacial
- 1913 *A. dealbatus*. Travis, C. B. and W. G. On plant remains in postglacial gravels at Seaforth, Liverpool. [Lancashire Naturalist, 1913, p. 50.] Postglacial

***Meesea* Hedw.**

***Meesea Albertini* Bry. eur.**

- 1912 *Meesea Albertini*. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 89.] Glacial

Meesea longiseta Hedw.

- 1905 *Meesea longiseta*. Neuweiler, E. Zur Interglazialfl. der Schweiz. Schieferkohlen. [Ber. d. Schweiz. bot. Ges., Heft 15, Beilage. Neunter Ber. d. Zürich. bot. Ges., p. 96.] Interglacial
- 1909 *M. longiseta*. Hartz, N. Bidrag til Danmarks tertiære Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 261.] Interglacial
- 1912 *M. longiseta*. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 89.] Glacial
- 1923 *M. longiseta*. Baumberger, E., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, pp. 84, 334.] Quaternary

Meesea trichodes (L.) Spruce.

- 1910 *Meesea trichodes*. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.] Quaternary
- 1912 *Meesea trichodes*. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 89.] Glacial

Meesea triquetra (L.) Aongstr.

- 1896 *Meesea triquetra*. Farneti, R. Ricerche di briol. palaeont. al periodo glaciale. [Atti del Istit. Bot. della Reale Univ. d. Pavia, Ser. 2, V, p. 52.] Glacial
- 1898 *M. triquetra*. Andersson, Gunnar. Stud. öfver Finlands Kvartärflora. [Bull. de la Commission géol. de Finlande, Tome 2, No. 8, p. 137.] Quaternary
- 1904 *M. triquetra*. Geinitz, C., und Weber, C. A. Ueber ein Moostorflager der Rostocker Heide. [Arch. d. Ver. d. Fr. d. Naturgesch. in Mecklenburg, LVIII, p. 13.] Postglacial
- 1904 *M. triquetra* var. *timmioides* Sanio. Geinitz und Weber, op. et loc. cit. Postglacial
- 1908 *Meesea tristicha* (Funck) Bry. eur. Weber, C. A. Die Moostorfschichten zwischen Sarkau und Cranz. [Engler's Bot. Jahrb., XLII, p. 43.] Pleistocene
- 1908 *M. tristicha* var. *timmioides* Sanio. Weber, C. A. op. cit., pp. 41, 43. Pleistocene
- 1909 *M. tristicha* (Funck) Bry. eur. Schuster, J. Palaeobot. Not. aus Bayern. [Ber. bayer. bot. Ges., XII, I, p. 58.] Schieferkohlen
- 1910 *M. triquetra*. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.] Quaternary
- 1912 *M. tristicha* (Funck) Bry. eur. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 89.] Glacial
- 1914 *M. triquetra*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B., No. 2 B, p. 248.] Diluvial
- 1923 *M. triquetra*. Gams, H. Interglacial bryophytes. [Die Schieferkohlen der Schweiz, B. 2, Geol. Karte d. Schweiz, geotechn. Ser., Lief. 8, p. 521.] Interglacial

- 1923 **M. triquetra**. Baumberger, E., etc. Die diluvialen Quaternary Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, pp. 84, 334, 521.]
- 1925 **M. triquetra**. Dixon, H. N. Moss Remains in Recent Russian Peat. [Journ. of Bot., LXIII, p. 370.]

Catoscopiaceae.

Catoscopium Brid.

Catoscopium nigritum (Hedw.) Brid.

- 1912 **Catoscopium nigritum**. Stark, P. Beitr. zur Kenntn. Glacial der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 89.]

Bartramiaceae.

Plagiopodopsis Britton & Hollick

Plagiopodopsis Scudderi Britton et Hollick.

- in Bull. Torr. Bot. Cl. 42:10 (1915); Figs. 1, 2. Tertiary
Cum fructu. Shales of
Florissant,
Colorado,
U. S. A.

Conostomum Sw.

Conostomum tetragonum (Dicks.) Lindb.

- 1914 **Conostomum boreale** Sw. Zmuda, A. J. Fossile Diluvial Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 249.]

Philonotis Brid.

Philonotis calcarea (Br. Eur.) Schimp.

- 1911 **Philonotis ?calcarea**. Dixon, H. N. in Lewis, F. J. Iceland The plant remains in the Scottish Peat Mosses. peat; recent
Part IV. [Trans. Roy. Soc. Edinb., XLVII, p. 831.]

Philonotis coespitosa Wils.

- 1918 **Philonotis coespitosa**. Heim, Arnold, and Gams, H. Interglacial Interglaz. Bild. bei Wildhaus. [Vierteljahrsschr. naturf. Ges. Zürich, LXIII, p. 27.]

Philonotis fontana (L.) Brid.

- 1888 **Philonotis fontana**. Reid, C. and Ridley, H. N. Glacial Fossil Arctic Plants from... Hoxne, in Suffolk. [Geol. Mag., Dec. III, Vol. V, p. 444.]

- 1904 *P. fontana* var. *ampliretis* Dixon. Bell, A. M. Late glacial
Implementiferous Sections at Wolvercote (Ox-
fordshire). [Quart. Journ. Geol. Soc., LX, 124.]
- 1909 *P. fontana*. Nørregaard, E. M. Et senglacialt ... Late glacial
fra Dejbjerg Bakker. [Meddel. fra Dansk geol.
Förening, No. 15, p. 326.]
- 1910 *P. fontana*. Hesselbo, A. Mosrester fra Diluviet Diluvial
ved Skaerumhede. [Danmarks geol. Undersøgelse,
II Raekke, No. 25, p. 106.]
- 1911 *P. fontana*. Dixon, H. N. in Lewis, F. J. The Iceland
plant remains in the Scottish Peat Mosses. Part
IV. [Trans. Roy. Soc. Edinb., XLVII, pp. 830,
831.] peat, recent
- 1912 *P. fontana*. Dixon, H. N. in Warren, S. H. Late glacial
A late Glacial stage in the Lea Valley. [Quart.
Journ. Geol. Soc., LXVIII, p. 231.]
- 1914 *P. fontana*. Zmuda, A. J. Fossile Flora des Diluvial
Krakauer Diluviums. [Bull. int. Acad. Sci. d.
sc. math. et nat., Sér. B, No. 2 B, p. 249.]
- 1915 *P. fontana*. Reid, Clement and E. M. The Pliocene
Floras of the Dutch-Prussian Border. [Med.
van de Rijksopspor. van Delfstoffen, No. 6, p. 53.] Pliocene
- 1923 *P. fontana* var. *glacialis*. Baumberger, E., etc. Quaternary
Die diluvialen Schieferkohlen der Schweiz. [Beitr.
Geol. Schweiz., geotechn. Ser., Lief. 8, p. 521.]

***Philonotis seriata* Mitt.**

- 1912 *Philonotis seriata*. Stark, P. Beitr. zur Kenntn. Glacial
der eiszeitlich. Fl. und Fauna Badens. [Ber.
naturforsch. Ges. Freiburg i. B., XIX, p. 90.]

***Philonotis tomentella* Mol.**

- 1912 *Philonotis alpicola* Jur. Stark, P. Beitr. zur Glacial
Kenntn. der eiszeitlich Fl. und Fauna Badens.
[Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 89.]
- 1914 *Philonotis tomentella*. Weber, C. A. Die Mammut- Glacial
flora von Borna. [Abh. Nat. Ver. Bremen, XXIII,
Heft 1, p. 18.]

***Philonotis* species.**

- 1911 *Philonotis* sp. Dixon, H. N. in Lewis, F. J. Iceland
The plant remains in the Scottish Peat Mosses.
Part IV. [Trans. Roy. Soc. Edinb., XLVII, p. 830.] peat, recent
Note. Leaf with very stout nerve; much eroded.
May be an adpressa form.

Timmiaceae.

***Timmia* Hedw.**

***Timmia austriaca* Hedw.**

- 1912 *Timmia* cf. *austriaca*. Stark, P. Beitr. zur Kenntn. Glacial
der eiszeitlich. Fl. und Fauna Badens. [Ber.
naturforsch. Ges. Freiburg i. B., XIX, p. 116.]

Timmia bavarica Hessel.

- 1910 *Timmia bavarica*. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.] Diluvial

Timmia megapolitana Hedw.

- 1912 *Timmia megapolitana*. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 90.] Glacial

Timmia norvegica Zett.

- 1910 *Timmia norvegica*. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.] Diluvial
- 1912 *T. norvegica*. Dixon, H. N. in Warren, S. H. A late Glacial stage in the Lea Valley. [Quart. Journ. Geol. Soc., LXVIII, P. 231.] Late glacial
- 1914 *T. norvegica*. Weber, C. A. Die Mammutflora von Borna. [Abh. Nat. Ver. Bremen, XXIII, Heft 1, p. 18.] Glacial

Polytrichaceae.**Catharinaea** Ehrh.**Catharinaea subundulata** (Goepp. et Menge.)

Broth. in Engl. & Prantl, die natürl. Pflanzenfam., Ed. 2, Bd. XI, 2 Hälfte, p. 523 (1925).

- 1853 *Polytrichum subundulatum* Goepp. & M. in Goepert, H. R. Ueber die Bernsteinflora, p. 459. Amber
(*Atrichum subundulatum* Schimp., *Traité de Pal. Végétale*, I, p. 244).

Note. Neither Schimper nor any of the later writers seem to comment on this. It is presumably not specifically distinct from *C. undulata*.

Catharinaea undulata (L.) Web. et Mohr.

- 1922 *Catharinaea undulata*. Jessen, Knud og Rasmussen, Recent R. Et Profil Gennem en Tørvemose paa Faerørne. [Danmarks geol. Undersøgelse, IV Raekke, No. 13, p. 12.]

Oligotrichum Lam. et De Cand.**Oligotrichum hercynicum** (Huds.) Lindb.

- 1912 *Oligotrichum hercynicum* Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 90.] Glacial

Pogonatum P. Beauv.**Pogonatum suburnigerum**

(Goepp. et Menge.) Dixon, comb. nov.

- 1853 *Polytrichum suburnigerum* Goepp. & M. in Goepert, H. R. Ueber die Bernsteinflora, p. 459. Amber

Note. Schimper (Traité de Pal. Végétale, I, p. 244) points out that the remains being solely leaves, the specific position must be doubtful.

Pogonatum urnigerum (L.) P. Beauv.

- 1902 *Pogonatum urnigerum*. Hartz, N. Bidrag til Danmarks senglaciale Flora og Fauna. [Danmarks geol. Undersøgelse, II Raekke, No. 11, p. 11.] Late glacial
- 1904 *P. urnigerum*. Weber, C. A. in Mueller, G. und Weber. Ueber eine fröhdiluviale ... Flora bei Lüneburg. [Abh. Kgl. preuss. geol. Landesanst. und Bergakad., Heft 40, p. 16.] Early glacial
- 1914 *P. urnigerum*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 250.] Diluvial

Polytrichum L.

Polytrichum alpinum L.

- 1912 *Polytrichum alpinum*. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 90.] Glacial
- 1914 *P. alpinum*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 250.] Diluvial

Polytrichum attenuatum Menz.

- 1909 *Polytrichum attenuatum*. Hartz, N. Bidrag til Danmarks tertiaere Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 261.] Interglacial
- 1922 *P. attenuatum*. Jessen, Knud, og Rasmussen, R. Et Profil Gennem en Tørvemose paa Faerørne. Danmarks geol. Undersøgelse, IV Raekke, No. 13, p. 12.] Recent

Polytrichum commune L.

- 1897 *Polytrichum commune*. Beck, R. und Weber, C. A. Ueber ein Torflager des sächsisch. Erzgebirges. [Zeitschr. d. deutsch. geol. Ges., XLIX, p. 666.] Diluvial
- 1909 *P. commune*. Hartz, N. Bidrag til Danmarks tertiaere..... Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 261.] Interglacial
- 1910 *P. commune*. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.] Quaternary
- 1914 *P. commune*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 250.] Diluvial
- 1917 *P. commune*. Rudolph, K. Untersuch. über den Aufbau böhmisch. Moore. [Abh. k. k. zool.-bot. Ges. Wien, IX, p. 85.] Recent
- 1922 *P. commune*. Jessen, Knud, og Rasmussen, R. Et Profil Gennem en Tørvemose paa Faerørne. [Danmarks geol. Undersøgelse, IV Raekke, No. 13, p. 12.] Recent
- 1924 *P. commune*. Burrell, W. H. Pennine Peat. [The Naturalist, 1924, p. 148.] Recent

Polytrichum Florissanti Knowlton.

- 1916 (?) *Polytrichum Florissanti* Knowlton n. sp. A Review of the fossil plants from Florissant, Colorado. [Proc. United States Nat. Mus., LI, p. 245; t. 12.] Tertiary. Florissant shales

Note. A seta with capsule; no leaves found. The author compares with *P. juniperinum*, but there can hardly be any reason for selecting this species as the nearest ally. The reference to *Polytrichum* itself is not certain. From the figure it certainly looks like this genus.

Polytrichum gracile Menz.

- 1914 *Polytrichum gracile*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 250.] Diluvial

Polytrichum juniperinum Willd.

- 1904 *Polytrichum juniperinum*. Weber, C. A., in Müller, G. Ueber eine fröhdiluviale Flora bei Lüneburg. [Abh. Kgl. preuss. geol. Landesanst. und Bergakad., Heft 40, pp. 15, 16.] Early glacial
- 1909 *P. juniperinum*. Hartz, N. Bidrag til Danmarks tertiaere Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 261.] Interglacial
- 1912 *P. juniperinum*. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, 116.] Glacial
- 1914 *P. juniperinum*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 250.] Diluvial

Polytrichum piliferum Schreb.

- 1910 *Polytrichum pilosum* Floercke (sic.). Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.] Quaternary

Note. I presume that this refers to *P. pilosum* Neck., which is synonymous with *P. piliferum* Schreb.

Polytrichum sexangulare Floerke.

- 1914 *Polytrichum sexangulare*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 250.] Diluvial
- 1915 *P. sexangulare*. Camus, F. Sur les mousses trouvées dans un mammouth. [Compt. Rend. Acad. Sci. Paris, CLX, p. 842.] Glacial

Polytrichum strictum Banks.

- 1909 *Polytrichum strictum*. Hartz, N. Bidrag til Danmarks tertiaere Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 261.] Interglacial

- 1910 *P. strictum*. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.] Quaternary
- 1912 *P. strictum* var. *alpestre* Limpr. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 90.] Glacial
- 1923 *P. strictum*. Baumberger, S., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, p. 84.] Quaternary

Polytrichum subseptentrionale Goepp. et Menge.

- 1853 *Polytrichum subseptentrionale* Goepp. & M. in Amber
Goeppert, H. R. Ueber die Bernsteinflora. [Monatsber. d. Berliner Akad., 1853, p. 459.]
Note. Schimper (Traité de Pal. Végétale, I, p. 244) remarks on this that in view of the material available the affinity must be problematic, and even the genus may be doubtful.

Polytrichum species.

- 1898 *Polytrichum* sp. Andersson, Gunnar. Stud. öfver Finlands Kwartärflora. [Bull. de la Commission géol. de Finlande, Tome 2, No. 8, p. 137.] Quaternary
- 1907 *Polytrichum* sp. Holst, N. O. Präglaciala Drysförande nära Ystad. [Geol. Fören. Förh., XXIX, p. 232.] Preglacial
- 1908 *Polytrichum* sp. Dixon, H. N. in Lewis, F. J. The plant remains in the Scottish Peat Mosses. Part III. [Trans. Roy. Soc. Edinb., XLVI, p. 48.] Quaternary
- 1910 *Polytrichum* sp. Sukačev, V. N. Sur la trouvaille de la flore arctique fossile près du village Demianskoe [Bull. Acad. Impér. Sc. St. Petersbourg, 1910, p. 460.] Quaternary
- 1910 *Polytrichum* sp. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 106.] Quaternary
- 1912 *Polytrichum* sp. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 116.] Glacial
- 1918—20 *Polytrichum* sp. Docturovsky, V. S., and Kuriashev, V. Results of Russian studies on peat moors. [Reports on Peat, 4.] Glacial

Hedwigiaceae.

Hedwigia Ehrh.

Hedwigia albicans (Web.) Lindb.

- 1914 *Hedwigia albicans*. Zmuda, A. J. Fossile Fl. des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 248.] Diluvial

Fontinalaceae.

Fontinalis (Dill.) L.

Fontinalis antipyretica L.

- 1914 *Fontinalis antipyretica*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2B, p. 249.] Diluvial
- 1919 *F. antipyretica*? Gadeceau, E. Les Forêts submergées de Belle-Ile-en-mer. [Bull. biol. de la France, etc. LIII, p. 295.] Postglacial
- Note. Many fragments; almost certainly *F. antipyretica*.

Fontinalis hypnoides Hartm.

- 1898 *Fontinalis hypnoides*. Andersson, Gunnar. Stud. öfver Finnlands Kvartärflora. [Bull. de la Commission géol. de Finlande, Tome 2, No. 8, p. 136.] Quaternary

Fontinalis pristina Lesq.

- 1883 *Fontinalis pristina* Lesq. in Hayden, F. V. Tertiary Flora of United States. [Rep. of U. S. A. Geol. Survey, VIII, p. 135; t. 21, f. 9.] See also Britton & Hollick, Bull. Torr. Bot. Club, 34: 139; t. 9, f. 2, 2a. Tertiary Florissant shales
- Note. Britton and Hollick say the determination is questionable, Knowlton (Rev. of the Fossil Plants from Florissant..., p. 245) states that precisely similar structures have proved to be avian feathers. It is, to say the least, exceedingly dubious whether it is a moss.

Fontinalis Sismondana Schimp.

- 1869 *Fontinalis Sismondana* Schimp., Traité de Pal. Végétale, I, p. 245. Figured by Sismonda, E. Matériaux pour servir à la Pal. d. terr. tert. du Piémont, 1865, t. XXXI bis. Tertiary
- Note. Schimper remarks that this is very close to *F. antipyretica*. He does not suggest wherein the difference consists.

? Fontinalis Tournalii (Brongn.) Schimp.

- 1828—38 *Muscites Tournalii* Brongn. Ad. Histoire des Végétaux Fossiles, p. 93, t. X. *Fontinalis* (?) *Tournalii* Schimp., Traité de Pal. Végétale, I, p. 245, t. VI, figs. 14, 15, 16 (nec Saporta, Végét. d. S. E. de la France, tab. X). Miocene
- Note. Schimper says that the characters recall a *Fontinalis* or a *Dichelyma* rather than any other pleurocarpous moss; it is a very small plant.
- Fossilium Catalogus II. 13.

Fontinalis species.

- 1890 *Fontinalis* sp. Dawson, Sir Wm., and Penhallow, D. P. On the Pleistocene Flora of Canada. [Bull. Geol. Soc. Amer., I, p. 315.] Pleistocene
- 1898 *Fontinalis* sp. Andersson, Gunnar. Stud. öfver Finlands Kvärtärflora. [Bull. de la Commission géol. de Finlande, Tome 2, No. 8, p. 136.] Quaternary
- 1900 *Fontinalis* sp. Penhallow, D. P. Canadian Pleistocene Flora of the Don Valley, [Rep. of 70th Meeting of Brit. Assoc., Bradford, 1900, Pt. 1, p. 335.] Pleistocene
- 1911 *Fontinalis* sp. Dixon, H. N., in Lewis, F. J. The plant remains in the Scottish peat mosses. Part IV. [Trans. Roy. Soc. Edinb., XLVII, p. 831 bis] Recent. Ice-land peat
- 1920 *Fontinalis* sp. Baker, Frank C. The life of the Pleistocene or glacial period. [Univ. of Ill. Bull., XVII, pp. 332, 335, 377.] Pleistocene

Dichelyma Myr.

D. capillaceum. cf. *Distichium capillaceum* (1920).
Dichelyma sp. cf. *Fontinalis Tournalii*.

Climaciaceae.**Climacium Web. et Mohr****Climacium dendroides (Dill.) Web. et Mohr**

- 1902 *Climacium dendroides*. Hartz, N. Bidrag til Danmarks senglacial Fl. og Fauna. [Danmarks geol. Undersøgelse, II Raekke, No. 11, p. 11.] Late glacial
- 1904 *C. dendroides*. Bell, A. M. Implementiferous Sections at Wolvercote (Oxfordshire). [Quart. Journ. Geol. Soc., LX, p. 124.] Late glacial
- 1910 *C. dendroides*. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 108.] Diluvial
- 1912 *C. dendroides*. Stark, P. Beitr. zur Kenntn. der eiszzeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 116.] Glacial
- 1914 *C. dendroides*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 250.] Diluvial
- 1923 *C. dendroides*? Baumberger, E., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, pp. 145, 334.] Quaternary
- 1924 *C. dendroides*. Beyle, M. Ueber einige Ablag.... der Hamburger Gegend. Dritter Teil. [Mitteil. aus dem Mineralog.-geol. Staatsinstitut, Heft VI, p. 26.] Glacial

Leucodontaceae.**Leucodon Schwaegr.****Leucodon sciuiroides (L.) Schwaegr.**

- 1905 *Leucodon sciuiroides*. Neuweiler, E. Die prähistor. Pleistocene

- Pflanzenreste Mitteleuropas [Vierteljahr. naturforsch. Ges. Zürich, L, Heft 6, p. 38.]
- 1914 *L. sciuroides*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2B, p. 249.] Diluvial
- 1923 *L. sciuroides*. Baumberger, E., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, p. 334.] Quaternary
- Note. *A. f. falcata* is also recorded, with the type.

Antitrichia Brid.

Antitrichia curtispindula (Hedw.) Brid.

- 1898 *Antitrichia curtispindula*. Andersson, Gunnar. Stud. öfver Finlands Kvartärflora. [Bull. de la Commission géol. de Finlande, Tome 2, No. 8, p. 135.] Quaternary
- 1905 *A. curtispindula*. Neuweiler, E. Die prähistor. Pflanzenreste Mitteleuropas [Vierteljahr. naturforsch. Ges. Zürich, L, Heft 6, pp. 37, 39.] Pleistocene
(The latter reference as *Anomodon curtispindula*, lapsu calami).
- 1909 *A. curtispindula*. Hartz, N. Bidrag til Danmarks tertiære.... Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 260.] Interglacial
- 1910 *A. curtispindula*. Dixon, H. N. Some "Neolithic" Moss remains from Fort William. [Ann. Scott. Nat. Hist., 1910, p. 104.] Post-glacial
- 1913 *A. curtispindula*. Beyle, M. Ueber einige Ablag... der Hamburger Gegend. Erster Teil. [Jahrb. der Hamburg. wiss. Anst., XXX, 6 Beih., p. 83.] Glacial
- 1923 *A. curtispindula*. Baumberger, E., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, pp. 145, 334.] Quaternary

Neckeraceae.

Neckera Hedw.

Neckera complanata (L.) Hüben.

- 1905 *Neckera complanata*. Neuweiler, E. Die prähistor. Pflanzenreste Mitteleuropas [Vierteljahr. naturforsch. Ges. Zürich, L, Heft 6, pp. 38, 40.] Pleistocene
- 1909 *N. complanata*. Hartz, N. Bidrag til Danmarks tertiære.... Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 261.] Interglacial
- 1910 *N. complanata*. Dixon, H. N. Some "Neolithic" moss remains from Fort William. [Ann. Scott. Nat. Hist., 1910, p. 104.] Postglacial
- 1920 *N. complanata*. Reid, E. M. Two preglacial Floras from Castle Eden. [Quart. Journ. Geol. Soc., LXXVI, p. 111.] Preglacial
Pliocene
- 1923 *N. complanata*. Baumberger, E., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, p. 334.] Quaternary

- 1925 *N. complanata*? Weyland, H. Beitr. zur Kenntn. fossiler Moose. I. [Senckenbergiana, VII, Heft 1/2, p. 53, t. III.] Upper Pliocene

***Neckera crispa* (L.) Hedw.**

- 1901 *Neckera crispa*. Clerici, E. Contrib. alla geologia dei dintorni di Roma. [Rend. Lincei, Roma, X, p. 79.] Recent
- 1905 *N. crispa*. Neuweiler, E. Die prähistor. Pflanzenreste Mitteleuropas..... [Vierteljahr. naturforsch. Ges. Zürich, L, Heft 6, p. 38.] Pleistocene
- 1909 *N. crispa*. Hartz, N. Bidrag til Danmarks tertiære Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 261.] Interglacial
- 1923 *N. crispa*. Baumberger, E., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, p. 334.] Quaternary
- 1924 *N. crispa*. Maffei, Luigi. Contrib. allo stud. d. flora fossile de Pianico. [Atti Istit. Bot. Univ. Pavia, Ser. III, 1/2, p. 53, t. III.] Quaternary

***Neckera pennata* (L.) Hedw.**

- 1914 *Neckera pennata*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 249.] Diluvial

***Neckera pumila* Hedw.**

- 1897 *Neckera pumila*. Fischer, Ed. Nachtr. zum Pflanzenverzeichnis. von Pianico-Sellere. [Neues Jahrb. f. Mineralogie, II, p. 106.] Interglacial
- 1910 *N. pumila*. Dixon, H. N. Some "Neolithic" Moss remains from Fort William. [Ann. Scott. Nat. Hist., 1910, p. 104.] Postglacial

***Neckera* species.**

- 1908 *Neckera* sp. Engelhardt, H., and Kinkel, F. Oberpliocene Fl. und Fauna. des Frankfurter Klärbeckens. [Abh. Senckenb. naturforsch. Ges., XXIX, p. 188, t. XXII, figs. 18—21.] Upper Pliocene

***Homalia* (Brid.) Bry. eur.**

***Homalia trichomanoides* (Schreb.) Bry. eur.**

- 1904 *Homalia trichomanoides*. Bell, A. M. Implementiferous Sections at Wolvercote (Oxfordshire). [Quart. Journ. Geol. Soc., LX, p. 124.] Late glacial
- 1914 *H. trichomanoides*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 249.] Diluvial
- 1920 *H. trichomanoides*. Reid, E. M. Two preglacial Floras from Castle Eden. [Quart. Journ. Geol. Soc., LXXXVI, p. 111.] Pliocene

Pinnatella (C. M.) Fleisch.**Pinnatella species.**

- 1915 **Pinnatella** sp. Reid, Clement and E. M. The Pliocene Floras of the Dutch-Prussian Border. [Med. van de Rijksopspor. van Delfstoffen, No. 6, pp. 51.] See also Bryologist, XIX, p. 51 (1916.)
 Note. Fragments only, showing traces of an intra-marginal border to the leaves, and in other respects agreeing with the § *Urocladium* of *Pinnatella*. Near to *P. alopecuroides* (Hook.) Fleisch., but probably specifically distinct.

Thamnium Bry. eur.**Thamnium alopecurum (L.) Bry. eur.**

- 1909 **Porotrichum alopecurum (L.)** Mitt. Hartz, N. Bidrag til Danmarks tertiære Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 261.] Interglacial
 1925 **Thamnium alopecurum.** Weyland, H. Beitr. zur Kenntn. fossiler Moose. I. [Senckenbergiana, VII, Heft 1/2, p. 11, fig. 1.] Upper Pliocene

Thamnium species.

- 1908 **Thamnium** sp. Engelhardt, H., and Kinkel, F. Oberpliocäne Fl. und Fauna des Frankfurter Klärbeckens. [Abh. Senckenb. naturforsch. Ges., XXIX, p. 189, t. 22, figs. 14, 15.] Upper Pliocene
 Note. I should say *T. alopecurum*, without doubt.

Lembophyllaceae.**Isothecium Brid.****Isothecium myosuroides (Dill.) Brid.**

- 1909 **Isothecium myosuroides.** Hartz, N. Bidrag til Danmarks tertiære Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 261.] Interglacial
 1910 **Eurhynchium myosuroides (Dill.) Schimp.** Dixon, H. N. Some "Neolithic" Moss remains from Fort William. [Ann. Scott. Nat. Hist., 1910, p. 105.] Postglacial
 1913 **Isothecium myosuroides.** Beyle, M. Ueber einige Ablagerung... der Hamburger Gegend. Erster Teil. [Jahrb. der Hamburg. wiss. Anst., XXX, 6, Beih., p. 83.] Glacial

Isothecium viviparum (Neck.) Lindb.

- 1905 **Isothecium myurum (Poll.) Brid.** Neuweiler, E. Pleistocene Die prähistor. Pflanzenreste Mitteleuropas [Vierteljahr. naturforsch. Ges. Zürich, L, Heft 6, p. 38.]

- 1909 *I. myurum*. Hartz, N. Bidrag til Danmarks terraene Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 261.] Interglacial
- 1910 *Eurhynchium myurum* (Poll.) Dixon. Dixon, H. N. Some "Neolithic" Moss remains from Fort William. [Ann. Scott. Nat. Hist., 1910, p. 105.] Postglacial
- 1914 *Isothecium myurum*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2B, p. 249.] Diluvial

Fabroniaceae.

Fabronia Raddi, cf. *Muscites serratus* Goepp. & Ber.

Entodontaceae.

Orthothecium Bry. eur.

Orthothecium chryseum (Schwaegr.) Bry. eur.

- 1910 *Stereodon chryseus* (Schwaegr.) Mitt.? Hesselbo, A. Diluvial Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 108.]

Orthothecium intricatum (Hartm.) Bry. eur.

- 1912 *Orthothecium intricatum*. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 90.] Glacial

Orthothecium rufescens (Dicks.) Bry. eur.

- 1912 *Orthothecium rufescens*. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 90.] Glacial

Pylaisia Bry. eur.

Pylaisia polyantha (Schreb.) Bry. eur.

- 1913 *Pylaisia polyantha*. Beyle, M. Ueber einige Ab- lag. fossiler Pflanz. der Hamburger Gegend, Erster Teil. [Jahrb. der Hamburg. wiss. Anst., XXX, 6, Beih., p. 83.] Glacial

Leskeaceae.

Heterocladium Bry. eur.

Heterocladium squarrosulum (Voit) Lindb.

- 1914 *Heterocladium squarrosulum*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2B, p. 249.] Diluvial

Heterocladium species.

- 1908 *Heterocladium* sp. Engelhardt, N., and Kinkelid, F. Oberpliocäne Fl. und Fauna des Frankfurter Klärbeckens. [Abh. Senckenb. naturforsch. Ges., XXIX, p. 189, t. 22, figs. 24—27.] Upper Pliocene
 Note. Weyland [Senckenbergiana, VII, Heft 1/2, p. 13] states that no material of this was available. The figure of the leaf showing nerve reaching nearly to apex seems to preclude *Heterocladium*, though the cell structure is not inconsistent with this genus.

Anomodon Hook. et Tayl.**Anomodon longifolius (Schleich.) Bruch.**

- 1923 *Anomodon longifolius*. Baumberger, E., etc. Die Quaternary diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, p. 334.]

Anomodon viticulosus (L.) Hook. et Tayl.

- 1905 *Anomodon viticulosus*. Neuweiler, E. Die prähistor. Pleistocene Pflanzenreste Mitteleuropas [Vierteljahr. naturforsch. Ges. Zürich, L, Heft 6, p. 37.]
 1907 *A. viticulosus*. Dixon, H. N., in Lewis, F. J. Peat Summary of Progress for 1907, p. 99. [Mem. Geol. Survey.]
 1909 *A. viticulosus*. Hartz, N. Bidrag til Danmarks Interglacial tertiære Flora. [Danmarks geol. Undersøgelser, II Raekke, No. 20, p. 260.]
 1914 *A. viticulosus*. Zmuda, A. J. Fossile Flora des Diluvial Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 249.]
 1923 *A. viticulosus*. Baumberger, E., etc. Die diluvialen Quaternary Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, p. 334.]
 1925 *A. viticulosus*. Weyland, H. Beitr. zur Kenntn. Upper fossiler Moose. I. [Senckenbergiana, VII, Heft 1/2, p. 12, Fig. 4.] Pliocene
 = *Anomodon* sp. Engelhardt, H. & Kinkelid, F. Oberpliocäne Fl. und Fauna... des Frankfurter Klärbeckens. [Abh. Senckenb. naturforsch. Ges., XXIX, p. 189, t. 22, Figs. 16, 17.]
 Note. As Weyland remarks, there is nothing to preclude this being *A. viticulosus*.

Lescuraea Bry. eur.**Lescuraea striata (Schwaegr.) Bry. eur.**

- 1912 *Lescuraea striata*. Stark, P. Beitr. zur Kenntn. Glacial der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 90.]

Leskea Hedw.**Leskea polycarpa Ehrh.**

- 1898 *Leskea polycarpa*. Andersson, Gunnar. Stud. öfver Quaternary

Finlands Kwartärflora. [Bull. de la Commission géol. de Finlande, Tome 2, No. 8, p. 137.]

Leskea species.

- 1908 *Leskea* sp. Engelhardt, H. & Kinkel, F. Oberpliocäne Fl. und Fauna des Frankfurter Klärbeckens. [Abh. Senckenb. naturforsch. Ges., XXIX, p. 188, t. 22, figs. 28, 29.] Upper Pliocene

Note. The determination as a *Leskea* cannot be justified; the upper half of the leaf shows no nerve. Weyland, H. (Beitr. zur Kenntn. fossiler Moose, in Senckenbergiana, VII, Heft 1/2) refers to this, and figures it (Fig. 6), remarking that in the condition of the fragment it must be left indeterminate.

Pseudoleskea Bry. eur.

Pseudoleskea filamentosa (Dicks.) Broth.

- 1912 *Pseudoleskea atrovirens*. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 90.] Glacial

Pseudoleskea atrovirens (Dicks.) (P. patens Limpr.)

- 1915 *Pseudoleskea atrovirens*. Reid, Clement & E. M. The Pliocene Floras of the Dutch-Prussian Border. [Med. van de Rijksopspor. van Delfstoffen, No. 6, p. 52.] Pliocene

Note. A slight doubt attaches to the determination, owing to the remains being associated with such species as *Eurhynchium speciosum* Schimp., *Philonotis fontana* etc.; the objection being somewhat neutralized by the presence also of *Homalothecium sericeum* and *Ditrichum tortile*. Structurally the leaves quite agreed.

Thuidium Bry. eur.

Thuidium abietinum (Dill.) Bry. eur.

- 1903 *Thuidium abietinum*. Range, Paul. Das Diluv. von Lübeck und seine Dryastone [Zeitschr. f. Naturwiss., LXXXVI, p. 269.] Diluvial
- 1911 *T. abietinum*. Stoller, J. Die Flora der jung-glazialen Ablag. Ostpreussens. [Jahrb. d. Kgl. preuss. geol. Landesanst., XXXI, T. II, H. 1, p. 123.] Glacial
- 1914 *T. abietinum*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 249.] Diluvial
- 1918—20 *T. abietinum*. Docturovsky, V. S., & Kudriashchev, V. Results of Russian studies on peat moors. [Reports on Peat, 4.] Glacial

Thuidium antiquum Schimp.

- 1865 *Thuidium antiquum* Schimp. in Heer, Osw. Die Urwelt der Schweiz, 1 Aufl., p. 497. Quaternary lignites of Switzerland
- Note. Schimper (Traité de Pal. Végét., I.

p. 253) refers to this — without naming it — as apparently identical with *T. delicatulum*. Later, in Heer's work, he gives it the above name, and refers to it as being very close to *T. delicatulum*.

Thuidium delicatulum (Dill.) Mitt.

- 1869 *Thuidium delicatulum*. Schimper, W. P. *Traité de Pal. végétale*, I, p. 253 (cf. *T. antiquum*). Quaternary lignites of Switzerland Postglacial
- 1910 *T. delicatulum*. Dixon, H. N. Some "Neolithic" Moss remains from Fort William. [Ann. Scott. Nat. Hist., 1910, p. 104.]
- 1910 *T. delicatulum* (or *T. recognitum* Lindb.). Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 108.] Diluvial
- 1911 *T. delicatulum*. Stoller, J. Beitr. zur Kenntn. der diluv. Flora Norddeutschlands. [Jahrb. d. Kgl. preuss. geol. Landesanstalt, XXIX, p. 135.] Diluvial
- 1914 *T. delicatulum*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 249.] Diluvial
- 1918—20 *T. delicatulum*. Doctuirowsky, V. S., & Kudriashev, V. Results of Russian studies on peat moors. [Reports on Peat, 4.] Postglacial
- 1923 *T. delicatulum*. Baumberger, E., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, p. 334.] Quaternary

Thuidium elatinum (Sap.) Schimp., *Traité de pal. végétale*, I, p. 250 (1869); t. VI, fig. 22—26.

- 1865 *Muscites elatinus* Saporta G. *Etudes sur la vég. du Sud-Est de la France*. [Ann. des Sc. nat. Par., 5^e sér., IV, p. 33; t. I, f. 2.] Tertiary
- Note. Schimper places this "entre *T. abietinum* et *T. delicatulum*". The figures however show a clearly bipinnate branching, which precludes *T. abietinum*. The stem-leaves if correctly drawn are erect and short-pointed, which would suggest *T. delicatulum* or *T. recognitum*. There is apparently no reason to suppose it is distinct from one of our modern species.

Thuidium oeningense (Braun) Schimp. op. et loc. cit.

- 1851 *Muscites oeningensis* Braun Al. Verzeichn. d. foss. Pflanz. von Oeningen. [Stizenberger, Uebersicht d. Verstein. Badens, p. 72]. *Hypnum oeningense* Schimp. MS. in Heer, O., *Flora tert. Helvetiae*, I, p. 29; t. III, f. 8; II, t. XCIV, f. 20, e; III, t. CXLII, f. 26, 27. Tertiary
- Note. Schimper states that this resembles *T. minutulum*.

A specimen of the plant figured by Heer (I, t. III, f. 8) is in the Geological Department of the British Museum (No. 40884). The stem is distinctly pinnate, and it may well be a *Thuidium*, but it need by no means be compared with *T. minutulum*.

Thuidium Philiberti Limpr.

- 1905 *Thuidium Philiberti*. Neuweiler, E. Die prähistor. Pleistocene
Pflanzenreste Mitteleuropas.... [Vierteljahr. natur-
forsch. Ges. Zürich, L, Heft 6, p. 38.]
- 1910 *T. Philiberti*. Dixon, H. N. Some "Neolithic" Postglacial
Moss remains from Fort William. [Ann. Scott.
Nat. Hist., 1910, p. 104.]
- 1923 *T. Philiberti*. Baumberger, E., etc. Die diluvialen Quaternary
Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz,
geotechn. Ser., Lief. 8, p. 334.]

var. pseudo-tamarisci (Limpr.) Ryan & Hagen

- 1905 *Thuidium pseudo-tamarisci*. Neuweiler, E., op. cit., Pleistocene
pp. 38, 40.

Thuidium recognitum Lindb. cf. *T. delicatulum*, 1910.**Thuidium tamariscinum** (Hedw.) Bry. eur.

- 1905 *Thuidium tamariscinum*. Neuweiler, E. Die prä- Pleistocene
histor. Pflanzenreste Mitteleuropas [Viertel-
jahr. naturforsch. Ges. Zürich, L, Heft 6, p. 38.]
- 1908 *T. tamariscinum*. Pax, F. Grundzüge der Pflanzen Post-tertiary
verbreitung in den Karpathen, II, p. 44.
- 1909 *T. tamariscinum*. Hartz, N. Bidrag til Danmarks Interglacial
tertiære.... Flora. [Danmarks geol. Undersøgelse,
II Raekke, No. 20, p. 261.]
- 1910 *T. tamariscinum*. Dixon, H. N. Some "Neolithic" Postglacial
Moss remains from Fort William. [Ann. Scott.
Nat. Hist. Soc., 1910, p. 104.]
- 1913 *T. tamariscinum*. Beyle, M. Ueber einige Ablage- Glacial
rung.... der Hamburger Gegend. Erster Teil.
[Jahrb. der Hamburg. wiss. Anst., XXX, 6 Beih.,
p. 83.]
- 1920 *T. tamariscinum*. Reid, E. M. Two pre-glacial Floras Pliocene
from Castle Eden. [Quart. Journ. Geol. Soc.,
LXXVI, p. 111.]
- 1923 *T. tamariscinum*. Baumberger, E., etc. Die dilu- Quaternary
vialen Schieferkohlen der Schweiz. [Beitr. Geol.
Schweiz, geotechn. Ser., Lief. 8, p. 334.]

Thuidium species.

- 1912 *Thuidium* sp. Stark, P. Beitr. zur Kenntn. der Glacial
eiszzeitlich. Fl. und Fauna Badens. [Ber. natur-
forsch. Ges. Freiburg i. B., XIX, p. 116.]
- 1912 *Thuidium* sp. Dixon, H. N., in Warren, S. H. Late glacial
A late Glacial stage in the Lea Valley. [Quart.
Journ. Geol. Soc., LXVIII, p. 231.]

Helodium (Sull.) Warnst.**Helodium lanatum** (Stroem) Broth.

- 1907 *Thuidium Blandovii* (Web. & Mohr) Bry. eur. Peat
Dixon, H. N., in Lewis, F. J. Summary of Pro-
gress for 1907, p. 99. [Mem. Geol. Survey.]
- 1909 *Thuidium Blandovii*. Hartz, N. Bidrag til Dan- Interglacial
marks terciære Flora. [Danmarks geol. Un-
dersøgelse, II Raekke, No. 20, p. 261.]

- 1910 *Thuidium lanatum* (Stroem) Hagen. Hesselbo, A. Diluvial
Mosrester fra Diluviet ved Skaerumhede. [Dan-
marks geol. Undersøgelse, II Raekke, No. 25,
p. 108.]
- 1914 *Helodium Blandovii* (Web. & Mohr). Zmuda, A. J. Diluvial
Fossile Flora des Krakauer Diluviums. [Bull. int.
Acad. Sci. Cracovie d. sc. math. et nat., Sér. B,
No. 2B, p. 249.]
- 1918—20 *Helodium lanatum*. Docturovsky, V. S., and Postglacial
Kudriashev, V. Results of Russian studies on
peat moors. [Reports on Peat, 4.]

Hypnaceae.

Amblystegium Bry. eur.

Amblystegium Kochii Bry. eur.

- 1904 *Amblystegium Kochii*. Bell, A. M. Implementi- Late glacial
ferous Sections at Wolvercote (Oxfordshire).
[Quart. Journ. Geol. Soc., LX, p. 124.]
- 1920 *A. Kochii*. Reid, E. M. Two pre-glacial Floras Pliocene
from Castle Eden. [Quart. Journ. Geol. Soc.,
LXXVI, p. 111.]
- 1924 *A. Kochii*. Beyle, M. Ueber einige Ablagerung... Pleistocene
der Hamburger Gegend. Dritter Teil. [Mitteil.
aus dem Mineralog-geol. Staatsinstitut, Heft VI,
p. 26.]

Amblystegium riparium Bry. eur.

- 1912 *Amblystegium riparium*. Stark, P. Beitr. zur Glacial
Kenntn. der eiszeitlich. Fl. und Fauna Badens.
[Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 116.]
- 1914 *Leptodictyum riparium* (L.) Warnst. Zmuda, A. J. Diluvial
Fossile Flora des Krakauer Diluviums. [Bull. int.
Acad. Sci. Cracovie d. sc. math. et nat., Sér. B,
No. 2B, p. 249.]
- 1923 *A. riparium*. Douin, R. Les mousses des
tufs de Lautaret. [Rev. Génér. de Bot., XXXV,
p. 119.]

Amblystegium serpens Bry. eur.

- 1904 *Amblystegium serpens*. Bell, A. M. Implementi- Late glacial
ferous Sections at Wolvercote (Oxfordshire).
[Quart. Journ. Geol. Soc., LX, p. 124.]
- 1912 *A. serpens*. Dixon, H. N., in Warren, S. H. Late glacial
A late Glacial stage in the Lea Valley. [Quart.
Journ. Geol. Soc., LXVIII, p. 231.]
- 1914 *A. serpens*. Weber, C. A. Die Mammutflora von Glacial
Borna. [Abh. Nat. Ver. Bremen, XXIII, Heft 1,
p. 19.]
- 1920 *A. serpens*. Reid, E. M. Two pre-glacial Floras Pliocene
from Castle Eden. [Quart. Journ. Geol. Soc.,
LXXVI, p. 111.]

Amblystegium varium (Hedw.) Lindb.

- 1903 *Amblystegium varium*. Range, Paul. Das Diluv. Diluvial
von Lübeck und seine Dryastone [Zeitschr. f.
Naturwiss., LXXVI, p. 253.]
- 1904 *A. varium*. Reid, Clement. East Norfolk Geology. Preglacial
[Trans. Nort. & Norw. Nats. Soc., VII, p. 293.]
- 1909 *A. radicale* Bry. eur. Hartz, N. Bidrag til Dan- Interglacial
marks tertiaere Flora. [Danmarks geol. Un-
dersøgelse, II Raekke, No. 20, p. 260.]

Amblystegium species.

- 1908 *Amblystegium* sp. Holst, N. O. Efterskörd från Late glacial
de senglaciala Lagren vid Toppeladugård. [Sver.
geol. Undersökn. Årsbok, II, No. 2, p. 16.]
- 1908 *Amblystegium* sp. Weber, C. A. Die Moostorf- Pleistocene
schichten zwischen Sarkau und Cranz.
[Engler's Bot. Jahrb., XLII, pp. 42, 43.]
- 1910 *Amblystegium* sp. Sukačev, V. N. Sur la
flore arctique fossile près du village De-
mianskôe, gouv. Tobolsk. [Bull. Acad. Impér. Sci.
St. Pétersbourg, 1910, p. 460, fig. g.]
- 1912 *Amblystegium* sp. Stark, P. Beitr. zur Kenntn. Glacial
der eiszeitlich. Fl. und Fauna Badens. [Ber. na-
turforsch. Ges. Freiburg i. B., XIX, 116.]
- 1918—20 *Amblystegium* sp. Docturowsky, V. S., and Postglacial
Kudriashev, V. Results of Russian studies on
peat moors. [Reports on Peat, 4.]
- 1923 *Amblystegium* sp. Baumberger, E., etc. Die di- Quaternary
luvialen Schieferkohlen der Schweiz. [Beitr. Geol.
Schweiz, geotechn. Ser., Lief. 8, p. 521.]

Amblystegiella Loeske**Amblystegiella confervoides (Brid.) Loeske**

- 1909 *Amblystegium* cfr. *confervoides*. Hartz, N. Bidrag Interglacial
til Danmarks tertiaere Flora. [Danmarks
geol. Undersøgelse, II Raekke, No. 20, p. 260.]

Homomallium (Schimp.) Loeske**Homomallium incurvatum (Schrad.) Loeske**

- 1905 *Hypnum incurvatum* Schrad. Neuweiler, E. Die Pleistocene
prähist. Pflanzenreste Mitteleuropas [Vier-
teljahr. naturforsch. Ges. Zürich, L, Heft 6, p. 38.]

Hygroamblystegium Loeske**Hygroamblystegium curvicaule (Jur.) Loeske**

- 1914 *Amblystegium curvicaule* Jur. Weber, C. A. Die Glacial
Mammutflora von Borna. [Abh. Nat. Ver. Bremen,
XXIII, Heft 1, p. 19.]

Hygroamblystegium fallax (Brid.) Loeske

- 1903 *Amblystegium fallax* var. *spinifolium* (Schimp.) Diluvial
Range, Paul. Das Diluv. von Lübeck und seine
Dryastone [Zeitschr. f. Naturwiss., LXXVI,
p. 253.]

Hygroamblystegium filicinum (L.) Broth.

- 1901 *Amblystegium filicinum* (L.) De Not. Geheeb, A. Ueber ein fossiles Laubmoos aus der Umgebung von Fulda. [Beihefte zum Bot. Centralblatt, Bd. X, Heft 3, p. 125.]
- 1904 *A. filicinum*. Bell, A. M. Implementiferous Sections at Wolvercote (Oxfordshire). [Quart. Journ. Geol. Soc., LX, p. 124.] Late glacial
- 1908 *A. filicinum*. Holst, N. O. Efterskörd från de senglaciala Lagren vid Toppeladugård. [Sver. geol. Undersökn. Arsbok, II, No. 2, p. 19.] Late glacial
- 1910 *A. filicinum*. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 108.] Diluvial
- 1912 *A. filicinum*, and var. *vallisclausae* (Wils.). Dixon, H. N., in Warren, S. H. A late Glacial stage in the Lea Valley. [Quart. Journ. Geol. Soc., LXVIII, p. 231.] Late glacial
- 1914 *A. filicinum*. Weber, C. A. Die Mammutflora von Bornä. [Abh. Nat. Ver. Bremen, XXIII, Heft 1, p. 19.] Glacial
- 1914 *Cratoneuron filicinum* (L.) Roth. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 429.] Diluvial
- 1915 *A. filicinum*. Reid, Clement, and E. M. The Pliocene Floras of the Dutch-Prussian Border. [Med. van de Rijksopspor. van Delfstoffen, No. 6, p. 53.] Pliocene
- 1922 *A. filicinum*. Travis, W. G. On peaty bands in the Wallasey sandhills. [Proc. Liverpool Geol. Soc., III, p. 209.] Pleistocene
- 1922 *Hypnum filicinum* L. Jessen, Knud, og Rasmussen, R. Et Profil Gennem en Tørvemose paa Faerørne. [Danmarks geol. Undersøgelse, IV Raekke, No. 13, p. 12.] Recent
- 1923 *A. filicinum*. Baumberger, E., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, pp. 145, 335, 521.] Quaternary

Cratoneuron (Sulliv.) Roth**Cratoneuron commutatum (Hedw.) Roth**

- 1890 *Hypnum commutatum* Hedw. Dawson, Sir Wm., and Penhallow, D. P. On the Pleistocene Flora of Canada. [Bull. Geol. Soc. Amer., I, p. 315.] Pleistocene
- 1900 *H. commutatum*. Penhallow, D. P. Canadian Pleistocene Flora of the Don Valley. [Rep. of 70th Meeting of Brit. Assoc., Bradford. Pt. II, p. 335.] Pleistocene
- 1904 *Cratoneuron commutatum*. Bell, A. M. Implementiferous Sections at Wolvercote (Oxfordshire). [Quart. Journ. Geol. Soc., LX, p. 124.] Late glacial
- 1908 *H. commutatum*. Augé, L. Note sur tufs quaternaires de Piécourt. [Bull. Soc. Etudes Sc. nat. Nîmes, XXXV, p. 67.] Quaternary
- 1909 *H. commutatum*. Schuster, J. Paläobot. Not. aus Bayern. [Ber. bayer. bot. Ges., XII, I, p. 58.]

- 1920 *C. commutatum*. Baker, Frank C. The Life of the Pleistocene or glacial period. [Univ. of Illinois Bull., XVII, pp. 332, 335, 377.] Pleistocene
- 1923 *C. commutatum*. Baumberger, E., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, pp. 195, 335, 521.] Quaternary
- 1923 *C. cfr. commutatum*. Baumberger, op. cit., p. 145, 335.] Quaternary
- 1923 *C. commutatum*. Klähn, Hans. Die Petrogenese der Kalktuffe [Geol. Arch., 2, p. 305.] Kalktuffe
- 1923 *H. commutatum*. Douin, R. Les mousses . . . des tufs de Lautaret. [Rev. Génér. de Bot., XXXV, p. 120.]

Cratoneuron decipiens (De Not.) Broth.

- 1904 *Thuidium decipiens* De Not. Bell, A. M. Implementiferous Sections at Wolvercote (Oxfordshire). [Quart. Journ. Geol. Soc., LX, p. 124.] Late glacial
- 1910 *Th. decipiens*. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersegelse, II Raekke, No. 25, p. 108.] Diluvial

Cratoneuron falcatum (Brid.) Roth

- 1904 *Hypnum falcatum* Brid. Bell, A. M. Implementiferous Sections at Wolvercote (Oxfordshire). [Quart. Journ. Geol. Soc., LX, p. 124.] Late glacial
- 1910 *H. falcatum*. Dixon, H. N. Some "Neolithic" Moss remains from Fort William. [Ann. Scott. Nat. Hist., 1910, p. 105.] Postglacial
- 1922 *H. falcatum*. Travis, W. G. On peaty bands in the Wallasey sandhills. [Proc. Liverpool Geol. Soc., III, p. 209.] Pleistocene
- 1923 *Cratoneuron falcatum*. Baumberger, E., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, pp. 145, 335.] Quaternary
- 1923 *H. falcatum*. Douin, R. Les mousses . . . des tufs de Lautaret. [Rev. Génér. de Bot., XXXV, p. 120.]

Cratoneuron irrigatum (Zett.) Roth

- 1912 *Hypnum irrigatum* Zett. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. Naturforsch. Ges. Freiburg i. B., XIX, p. 90.] Glacial
- 1923 *H. irrigatum*. Douin, R., Les mousses . . . des tufs de Lautaret. [Rev. Génér. de Bot., XXXV, p. 120.]

Cratoneuron species.

- 1892 *Hypnum filicinum* or *commutatum*. Boulay, N. Pliocene Flore pliocène du Mont-Dore, p. 45.

Drepanocladus Roth (Hypnum § Harpidium auct.)

Drepanocladus aduncus (Hedw.) Moenk.

- 1869 *Hypnum aduncum* Hedw. Schimper, W. P. Traité de Pal. Végétale, I, p. 254. Glacial deposits, Württemberg

- 1903 *H. aduncum* var. *sparsifolium* (Warnst.). Range, Diluvial
Paul. Das Diluvialgebiet von Lübeck und seine
Dryastone.... [Zeitschr. für Naturwiss., LXXXVI,
p. 253.]
- 1904 *Drepanocladus aduncus*. Bell, A. M. Implementi- Lateglacial
ferous Sections at Wolvercote (Oxfordshire.)
[Quart. Journ. Geol. Soc., LX, p. 124.]
- 1904 *D. aduncus*? Weber, C. A. in Mueller, G. Ueber Early glacial
eine frühdiluviale Flora bei Lüneburg. [Abh.
Kgl. preuss. geol. Landesanstalt und Bergakad.
Heft 40, p. 16.]
- 1908 *H. aduncum*. Weber, C. A. Die Moostorfschicht.
..... zwischen Sarkau und Cranz. [Engl. Bot.
Jahrb., XLII, pp. 40, 43.]
- 1908 *H. aduncum*. Pax, F. Grundzüge der Pflanzen- Post-tertiary
verbreitung in den Karpathen, II, p. 44.
- 1909 *H. aduncum*. Travis, W. G. Plant remains in Peat
peat at Aintree. [Trans. Liverpool Bot.
Soc., I, p. 5.]
- 1909 *H. aduncum*. Schuster, J. Paläobot. Not. aus Schiefer-
Bayern. [Ber. bayer. bot. Ges., XII, pp. 1, 58.] kohlen
- 1910 *Amblystegium aduncum* (Hedw.) Sanio. Hesselbo, Diluvial
A. Mosrester fra Diluviet ved Skaerumhede. [Dan-
marks geol. Undersøgelse, II Raekke, No. 25,
p. 108.]
- 1912 *H. aduncum*. Dixon, H. N., in Warren, S. H. Lateglacial
A late Glacial stage in the Lea Valley. [Quart.
Journ. Geol. Soc., LXVIII, p. 231.]
- 1912 *Drepanocladus subaduncus* Warnst. Szafer, W. Eine Diluvial
Dryasflora bei Krystynopol in Galizien. [Bull.
int. Acad. Sci. Cracovie d. sc. math. et nat.,
Sér. B, No. 2, p. 1107.]
- Note. The determination is said to be slightly
doubtful.
- 1919 *D. aduncus*. Gadeceau, E. Les Forêts submergées Postglacial
de Belle-Ile-en-mer. [Bull. biol. de la France,
etc., LIII, p. 295.]
- 1920 *D. aduncus*. Baker, Frank C. The life of the Pleistocene
Pleistocene or glacial period. [Univ. of Illinois
Bull., XVII, pp. 245, 280, 377.]
- 1922 *H. aduncum*. Travis, W. G. On peaty bands in Peat
the Wallasey sandhills. [Proc. Liverpool Geol.
Soc., III, p. 209.]

***Drepanocladus aduncus* (Hedw.) Gr. Kneiffii**

- 1852 *Hypnum Noegerrathii* Weber C. O. Die Tertiär- Tertiary
flora der niederrhein. Braunkohlenformation. [Pa-
laeontographica, II, p. 227, t. XXV.]
- Note. Schimper (Traité de Pal. Végét., I, 250)
refers this to *Hyp. aduncum* var. *Kneiffii*.
- 1896 *Hypnum aduncum* var. *groenlandicum* Heer. Engel, Pleistocene
Th. Geognost. Wegweiser durch Württemberg.
2^e Aufl., p. 436.]
- 1905 *H. aduncum* var. *Kneiffii groenlandicum*. Neuweiler, Pleistocene
E. Die prähistor. Pflanzenreste Mitteleuropas ...
[Vierteljahr. naturforsch. Ges. Zürich, L, Heft 6,
p. 39.]
- 1909 *Amblystegium aduncum* (Hedw.) Sanio ? var. Interglacial
Kneiffii. Hartz, N. Bidrag til Danmarks ter-

- tiaere Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 260.]
- 1909 *Hypnum* cfr. *Kneiffii*. Schuster, J. Paläobot. Not. aus Bayern. [Ber. bayer. bot. Ges., XII, pp. 1, 58.] Schieferkohlen
- 1910 *Amblystegium Kneiffii* Bry. eur. Hesselbo, A. Diluvial
Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 108.]
- 1919 *Drepanocladus aduncus* var. *Kneiffii*. Gadeceau, E. Postglacial
Les Forêts submergées de Belle-Ile-en-mer. [Bull. biol. de la France, etc., LIII, p. 295.]

***Drepanocladus aduncus* (Hedw.) Gr. pseudofluitans**

- 1904 *D. aduncus* var. *pseudofluitans* (Sanio). Bell, A. M. Lateglacial
Implementiferous Sections at Wolvercote (Oxfordshire). [Quart. Journ. Geol. Soc., LX, p. 124.]
- 1909 *Hypnum aduncum* var. *paternum* Sanio. Travis, Peat
W. G. Plant remains in peat at Aintree. [Trans. Liverpool Bot. Soc., 1, p. 5.]
- 1909 *Drepanocladus pseudofluitans* (Sanio). Stoller, J. Early
Die Pflanzenreste in den Stuttgarter Anlagen. [Mitteil. der geol. Abt. des k. württ. stat. Landes-Amts, No. 6. Beilage zu Jahresh. des Ver. für vaterl. Naturkunde in Württemberg, Jahrg. LXV, p. 73, fig. 1.] diluvial
- 1912 *H. aduncum* var. *pseudofluitans* Sanio. Dixon, H. Late glacial
N., in Warren, S. H. A late Glacial stage in the Lea Valley. [Quart. Journ. Geol. Soc., LXVIII, p. 231.]
- 1919 *D. pseudofluitans* (Sanio). Gadeceau, E. Les Postglacial
Forêts submergées de Belle-Ile-en-mer. [Bull. biol. de la France, etc., LIII, p. 295.]

***Drepanocladus badius* (Hartm.) Roth**

- 1914 *Drepanocladus badius*. Zmuda, A. J. Diluvial
des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 250.]

***Drepanocladus capillifolius* Warnst.**

- 1904 *Drepanocladus capillifolius*. Bell, A. M. Lateglacial
Implementiferous Sections at Wolvercote (Oxfordshire). [Quart. Journ. Geol. Soc., LX, p. 124.]
- 1904 *Hypnum capillifolium* Warnst. Reid, Clement. East Preglacial
Norfolk Geology. [Trans. Norf. & Norw. Nats. Soc., VII, p. 293.]
- 1910 *Amblystegium capillifolium* (Warnst.). Hesselbo, A. Diluvial
Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 108.]
- 1911 *D. capillifolius*. Zmuda, A. J., in Szafer, W. Early
Ueber eine alt-diluviale Flora in Krystynopol in diluvial
Wolhynien. [Kosmos, XXXVI, p. 337.]
- 1912 *D. capillifolius*. Szafer, W. Eine Dryasflora bei
Krystynopol in Galizien. [Bull. int. Acad. Sci.]

- Cracovie d. sc. math. et nat., Sér. B. No. 2, p. 1107.]
- 1912 *H. capillifolium*. Dixon, H. N., in Warren, S. H. Lateglacial
A late Glacial stage in the Lea Valley. [Quart.
Journ. Geol. Soc., LXVIII, p. 231.]
- 1914 *D. capillifolius*. Zmuda, A. J. Fossile Flora des Diluvial
Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. Sc. math. et nat., Sér. B, No. 2 B, p. 250.]
- 1915 *H. capillifolium*. Reid, Clement and E. M. The Pliocene
Pliocene Floras of the Dutch-Prussian Border. [Med. van de Rijksopspor. van Delfstoffen, No. 6, p. 53.]

Drepanocladus exannulatus (Guemb.) Warnst.

- 1896 *Amblystegium exannulatum* (Guemb.) De Not. Pleistocene
Andersson, Gunnar. Ueber das Fossile Vorkommen
..... in Russland und Dänemark. [Bih. Svensk
Vet.-Akad. Handl., XXII, Afd. III, No. 1, p. 6.] clay
- 1902 *A. exannulatum*. Hartz, N. Bidrag til Danmarks Late glacial
senglaciale Fl. og Fauna. [Danmarks geol. Undersøgelse, II Raekke, No. 11, p. 15.]
- 1903 *Hypnum fluitans* var. *brachydietyon* Ren. Holzinger, J. M. Some Fossil Mosses. [Bryologist, VI, p. 93.] Pleistocene
- 1904 *Drepanocladus exannulatus*. Weber, C. A., in Mueller, G. Ueber eine fröhdiluviale Flora bei
Lüneburg. [Abh. Kgl. preuss. geol. Landesanstalt und Bergakad., Heft 40, p. 16.] Early glacial
- 1904 *H. exannulatum*. Bell, A. M. Implementiferous Late glacial
Sections at Wolvercote (Oxfordshire). [Quart. Journ. Geol. Soc., LX, 124.]
- 1905 *H. fluitans-exannulatum*. Neuweiler, E. Die prä- Pleistocene
histor. Pflanzenreste Mitteleuropas (Vierteljahr. naturforsch. Ges. Zürich, L, Heft 6, p. 39.)
- 1907 *H. exannulatum* var. *brachydietyon* Ren. Dixon, H. Peat
N., in Lewis, F. J. Summary of Progress for 1907, p. 99. [Mem. Geol. Survey.]
- 1908 *H. exannulatum*. Weber, C. A. Die Moostorfschichten
..... zwischen Sarkau und Cranz. [Engl. Bot. Jahrb., XLII, pp. 33, 40, 43.] Peat
- 1909 *Amblystegium exannulatum*. Hartz, N. Bidrag til Diluvial
Danmarks tertiaere Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 260.]
- 1910 *A. exannulatum*. Hesselbo, A. Mosrester fra Diluvial
ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 108.] Diluvial
- 1912 *H. exannulatum*. Dixon, H. N., in Warren, S. H. Late glacial
A late Glacial stage in the Lea Valley. [Quart. Journ. Geol. Soc., LXVIII, p. 231.]
- 1912 *H. exannulatum* var. *orthophyllum* Milde. Dixon, Late glacial
H. N., in Warren, S. H., op. et loc. cit.
- 1912 *H. purpurascens* Limpr. Stark, P. Beitr. zur Glacial
Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 90.]
- 1912 *H. fluitans* Gr. *exannulatum* var. *pinnatum* Boul. f. Preglacial
Hawkesworth, E. A pre-glacial Lake-bed near Northallerton. [Naturalist, 1912, p. 204.]

- 1914 *H. exannulatum*. Weber, C. A. Die Mammutflora von Borna. [Abh. Nat. Ver. Bremen, XXIII, Heft 1, p. 23.] Glacial
- 1914 *Warnstorfia exannulata* (Guemb.) Loeske. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 249.] Diluvial
- 1918 *D. exannulatus*. Heim, Arnold, & Gams, H. Inter-glaziale Bildungen bei Wildhaus. [Vierteljahr. naturforsch. Ges. Zürich, LXVIII, p. 27.] Interglacial
- 1918—20 *D. exannulatus*. Docturowsky, V. S., & Kudriashev, V. Results of Russian studies on peat moors. [Reports on Peat, 4.] Interglacial
- 1919 *D. exannulatus*. Gadeceau, E. Les Forêts submergées de Belle-Ile-en-mer. [Bull. biol. de la France, etc., LIII, p. 295.] Postglacial
- 1922 *H. exannulatum*. Jessen, Knud, og Rasmussen, R. Et Provil Gennem in Tørvemose paa Færørne. [Danmarks geol. Undersøgelse, IV Raekke, No. 13, p. 12.] Recent
- 1923 *D. exannulatus*. Baumberger, E., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, p. 521.] Quaternary

Drepanocladus fluitans (L.) Gr. Rotae (De Not.)

- 1903 *H. fluitans* var. *glaciale* Ren. Holzinger, J. M. Pleistocene; Some Fossil Mosses. [Bryologist, VI, p. 94.] below Kansas Drift
- 1904 *Hypnum fluitans* var. *falcifolium* Ren. Bell, A. M. Implementiferous Sections at Wolvercote (Oxfordshire). [Quart. Journ. Geol. Soc., LX, p. 124.] Late glacial
- 1908 *Drepanocladus fluitans* Gr. Rotae. Stoller, J. Beitr. zur Kenntn. der diluv. Flora Norddeutschlands... [Jahrb. d. Kgl. preuss. geol. Landesanstalt, XXIX, p. 119.] Diluvial
- 1909 *Amblystegium Rotae* De Not. Hartz, N. Bidrag til Danmarks tertiære Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 260.] Diluvial
- 1910 *Amblystegium Rotae*. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 108.] Diluvial
- 1912 *H. exannulatum* Gr. Rotae. Dixon, H. N., in Warren, S. H. A late Glacial stage in the Lea Valley. [Quart. Journ. Geol. Soc., LXVIII, p. 231.] Late glacial
- 1914 *H. purpurascens* Limpr. var. *Rotae* (De Not.). Weber, C. A. Die Mammutflora von Borna. [Abh. Nat. Ver. Bremen, XXIII, Heft 1, p. 23.] Glacial

Drepanocladus fluitans (L.) Warnst.

- 1869 *Hypnum fluitans* L. Schimper, W. P. Traité de Pal. Végét., I, p. 254. Glacial deposits in Württemberg
- 1888 *Amblystegium fluitans* (L.) De Not. Reid, Clement, and Ridley, H. N. Fossil Arctic Plants from.... Hoxne, in Suffolk. [Geol. Mag., Decade III, Vol. V, p. 444.] Glacial

- 1889 *A. fluitans*. Candler, Chas. Observations on some Pleistocene
undescribed Lacustrine Deposits.... in Suffolk.
[Quart. Journ. Geol. Soc., XLV, p. 507.]
- 1896 *H. fluitans* var. *tennisimum* Schimp. Engel, Th.
Geognostisch. Wegweiser durch Württemberg. 2e
Aufl., p. 436.
- 1898 *A. fluitans*. Andersson, Gunnar. Stud. öfver Fin- Quaternary
lands Kvartärflora. [Bull. de la Com-
mission géol. de Finlande, Tome II, No. 8, p. 135.]
- 1900 *Hypnum fluitans*. Penhallow, D. P. Canadian Pleistocene
Pleistocene Flora of the Don Valley. [Rep. of 70th
Meeting of Brit. Assoc., Bradford, 1900. Pt. II,
p. 335.]
- 1901 *H. fluitans* f. *fossilis*. Geheeb, A. Ueber ein
fossiles Laubmoos aus der Umgebung von Fulda.
[Beih. zum Bot. Centralbl., X, Heft 3, p. 127.]
- 1902 *A. fluitans*. Hartz, N. Bidrag til Danmarks sen- Late glacial
glaciale Flora og Fauna. [Danmarks geol. Un-
dersøgelse, II Raekke, No. 11, p. 18.]
- 1904 *H. fluitans*. Bell, A. M. Implementiferous Sec- Late glacial
tions at Wolvercote (Oxfordshire). [Quart. Journ.
Geol. Soc., LX, p. 124.]
- 1904 *H. fluitans*. Reid, Clement. East Norfolk Geology. Preglacial
[Trans. Norf. & Norw. Nats. Soc., VII, p. 293.]
- 1905 *H. fluitans* var. *tennisimum* Schimp. Neuweiler, E. Pleistocene
Die prähistor. Pflanzenreste Mitteleuropas
[Vierteljahr. naturforsch. Ges. Zürich, L, Heft 6,
p. 39.]
- 1908 *Drepanocladus fluitans*. Stoller, J. Beitr. zur Diluvial
Kenntn. der diluv. Flora Norddeutschlands
[Jahrb. d. Kgl. preuss. geol. Landesanstalt, XXIX,
p. 119.]
- 1908 *Amblystegium fluitans*. Holst, N. O. Efterskörd Late glacial
från de senglaciala Lagren vid Toppeladugård.
[Sver. Geol. Undersökning Arsbok, II, No. 2,
p. 19 bis.]
- 1909 *A. fluitans*. Hartz, N. Bidrag til Danmarks terti- Diluvial
aere Flora. [Danmarks geol. Undersøgelse,
II Raekke, No. 20, p. 260.]
- 1909 *H. fluitans*. Schuster, J. Paläobot. Not. aus Schiefer-
Bayern. [Ber. bayer. bot. Ges., XII, 1, p. 58.] kohlen
- 1910 *H. fluitans*. Dixon, H. N. Some "Neolithic" Moss Postglacial
remains from Fort William. [Ann. Scott. Nat.
Hist., 1910, p. 105.]
- 1910 *A. fluitans*. Hesselbo, A. Mosrester fra Diluviet Diluvial
ved Skaerumhede. [Danmarks geol. Undersøgelse,
II Raekke, No. 25, p. 108.]
- 1911 *D. fluitans*. Stoller, J. Beitr. zur Kenntn. der Diluvial
diluvialen Flora Norddeutschlands. [Jahrb. d. Kgl.
preuss. geol. Landesanstalt, XXXII, T. 1, H. 1,
p. 135.]
- 1911 *A. fluitans*. Stoller J., op. cit., p. 130. Diluvial
- 1912 *H. fluitans*. Dixon, H. N., in Warren, S. H. Late glacial
A late Glacial stage in the Lea Valley. [Quart.
Journ. Geol. Soc., LXVIII, p. 231.]
- 1912 *H. fluitans* var. *falcatum* Schimp. Dixon, H. N., Late glacial
op. et loc. cit.
- 1912 *H. fluitans*. Stark, P. Beitr. zur Kenntn. der eis- Glacial
zeitlich. Fl. und Fauna Badens. [Ber. natur-
forsch. Ges. Freiburg i. B., XIX, p. 116.]

- 1914 *H. fluitans*. Weber, C. A. Die Mammutflora von Borna. [Abh. Nat. Ver. Bremen, XXIII, Heft 1, p. 23.] Glacial
- 1914 *D. fluitans* var. *pseudostramineus* (C. M.) (as *D. pseudostramineus* (C. M.) Roth). Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2B, p. 250.] Diluvial
- 1917 *Hypnum* cfr. *fluitans*. Weber, C. A. Die Pflanzenwelt des Rabutzer Beckentons.... [Bot. Jahrb. Syst., LIV, Beibl. No. 120, p. 14.]
- 1918 *D. fluitans*. Heim, Arnold, & Gams, H. Interglaziale Bildungen bei Wildhaus. [Vierteljahr. naturforsch. Ges. Zürich, LXVIII, p. 27.] Interglacial
- 1918—20 *D. fluitans*. Docturowsky, V. S., and Kudriashev, V. Results of Russian studies on peat moors. [Reports on Peat, 4.] Postglacial
- 1919 *D. fluitans*. Gadeceau, E. Les Forêts submergées de Belle-Ile-en-mer. [Bull. biol. de la France, etc., LIII, p. 295.] Postglacial
- 1920 *D. fluitans*. Baker, Frank C. The life of the Pleistocene or glacial period. [Univ. of Illinois Bull., XVII, pp. 332, 335, 377.] Pleistocene
- 1923 *D. fluitans*. Baumberger, E., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechu. Ser., Lief. 8, pp. 84, 336.] Quaternary

***Drepanocladus Hollosianus* (Schillb.)**

Györrfy MS., Broth. in Engl. & Prantl, Pflanzenfam., Musci, Ed. 2, II, p. 523.

Syn. Hypnum sp.? Hollós, L., in Kecszenmet Multja és Jelene, 1896, p. 25, fig. 22.

Hypnum Hollósi Schillb. in Term. tud. Közlöny, XXX, p. 436; Budapest, 1898 (nomen solum).

- 1912 *Hypnum Hollósi* Schillb. in Math. és term. tud. Ertesito, XXX, p. 636 (cf. pp. 646—649); figs. 1, 3, 4, 6, 8, 9. Pleistocene, probably

Note. Full descriptions and figures are given in the 1912 paper. The author compares it with *Acrocladium cuspidatum* and *Hyp. Taramellianum* Farneti (proximum).

***Drepanocladus intermedius* (Lindb.) Warnst.**

- 1898 *Amblystegium intermedium* (Lindb.) Lindb. Andersson, Gunnar. Stud. öfver Finlands Kvärtärflora. [Bull. de la Commission géol. de Finlande, Tome II, No. 8, p. 135.] Quaternary
- 1904 *Hypnum intermedium* Lindb. Bell, A. M. Implementiferous Sections at Wolvercote (Oxfordshire). [Quart. Journ. Geol. Soc., LX, p. 124.] Late glacial
- 1904 *H. intermedium*. Reid, Clement. East Norfolk Geology. [Trans. Norf. & Norw. Nats. Soc., VII, p. 193.] Preglacial
- 1905 *H. intermedium*. Neuweiler, E. Zur Interglazialflora der schweiz. Schieferkohlen. [Ber. d. schweizerisch. bot. Ges., Heft XV. Beilage. Neunter Ber. d. zürch. bot. Ges., p. 98.] Interglacial
- 1909 *H. intermedium*. Schuster, J. Paläobot. Not. aus Bayern. [Ber. bay. bot. Ges., XII, 1, p. 58.] Schieferkohlen

- 1910 *A. intermedium*. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 108.] Diluvial
- 1911 *H. intermedium*. Stoller, J. Die Flora der jung-glazialen Ablag. Ostpreussens. [Jahrb. d. Kgl. preuss. geol. Landesanstalt, XXXI, II, p. 130.] Early glacial
- 1912 *H. intermedium*. Whitehead, Goodchild, and Reid. Some notes on "moorlog"..... [Essex Naturalist, XVI, p. 56.] Submarine peat deposit.
- 1914 *H. intermedium*. Weber, C. A. Die Mammutflora von Borna. [Abh. Nat. Ver. Bremen, XXIII, Heft 1, p. 21.] Glacial
- 1914 *Limprichtia intermedia* (Lindb.) Loeske. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 249.] Diluvial
- 1918 *Drepanocladus intermedius*. Heim, Arnold, & Gams, H. Interglaz. Bildungen bei Wildhaus. [Vierteljahr. naturforsch. Ges. Zürich, LXVIII, p. 27 bis.] Interglacial
- 1920 *D. intermedius*. Baker, Frank C. The life of the Pleistocene or glacial period. [Univ. of Illinois Bull., XVII, pp. 332, 335, 377.] Pleistocene
- 1922 *H. intermedium*. Travis, W. G. On peaty bands in the Wallasey sandhills. [Proc. Liverpool Geol. Soc., III, p. 209.] Peat
- 1923 *D. intermedius*. Baumberger, E., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, pp. 84, 145, 335, 336, 521.] Diluvial

***Drepanocladus latifolius* (Lindb. et Arn.) Broth.**

- 1910 *Amblystegium latifolium* (Lindb. & Arn.) Lindb. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 108.] Diluvial

***Drepanocladus lycopodioides* (Schwaegr.) Warnst.**

- 1904 *Hypnum lycopodioides* Schwaegr.? Bell, A. M. Implementiferous Sections at Wolvercote (Oxfordshire). [Quart. Journ. Geol. Soc., LX, p. 124.] Late glacial
- 1914 *H. lycopodioides*. Weber, C. A. Die Mammutflora von Borna. [Abh. Nat. Ver. Bremen, XXIII, Heft 1, p. 22.] Glacial
- 1922 *H. lycopodioides*. Travis, W. G. On peaty bands in the Wallasey sandhills. [Proc. Liverpool Geol. Soc., III, p. 209.] Peat

***Drepanocladus revolvens* (Sw.) Warnst.**

- 1896 *Hypnum revolvens* Sw. Farneti, R. Ricerche di briol. palaeont. al periodo glaciale. [Atti del Istit. Bot. della Reale Univ. d. Pavia, Ser. 2, V, p. 54.] Glacial
- 1890 *H. revolvens*. Dawson, Sir Wm., and Penhallow, D. P. On the Pleistocene Flora of Canada. [Bull. Geol. Soc. Amer., I, p. 315.] Pleistocene
- 1900 *H. revolvens*. Penhallow, D. P. Canadian Pleistocene Flora of the Don Valley. [Rep. of 70th Meeting, Brit. Assoc., Bradford. Pt. II, p. 336.] Pleistocene

- 1903 *H. revolvens*. Range, Paul. Das Diluv. von Lübeck und seine Dryastone [Zeitschr. f. Naturwiss., LXXVI, p. 254.] Diluvial
- 1903 *H. revolvens*. Holzinger, J. M. Some Fossil Mosses. [Bryologist, VI, p. 94.] Pleistocene, below Kansas drift.
- 1904 *H. revolvens*. Bell, A. M. Implementiferous Sections at Wolvercote (Oxfordshire). [Quart. Journ. Geol. Soc., LX, p. 124.] Late glacial
- 1904 *H. revolvens*. Reid, Clement. East Norfolk Geology. [Trans. Norf. & Norw. Nats. Soc., VII, p. 293.] Preglacial
- 1909 *Amblystegium Cossoni* (Schreb.) Lindb. Nørregaard, E. M. Et senglacialt fra Dejbjerg Bakker. [Med. fra Dansk geol. Fören., No. 15, p. 326.] Late glacial
- 1910 *A. Cossoni*. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 108.] Diluvial
- 1912 *H. revolvens*. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Flora und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 90.] Glacial
- 1912 *H. Cossoni*. Stark, P., op. cit., p. 116. Glacial
- 1912 *H. revolvens*. Dixon, H. N., in Warren, S. H. A late Glacial stage in the Lea Valley. [Quart. Journ. Geol. Soc., LXVIII, p. 231.] Late glacial
- 1914 *H. revolvens*. Weber, C. A. Die Mammutflora von Borna. [Abh. Nat. Ver. Bremen, XXIII, Heft 1, p. 22.] Glacial
- 1915 *H. revolvens sensu latiore*. Camus, F. Sur les mousses trouvées dans un mammoth. [Compt. Rend. Acad. Sci. Paris, CLX, p. 842.] Glacial
- 1917 *Hypnum* cfr. *revolvens*. Weber, C. A. Die Pflanzenwelt des Rabutzer Beckentons [Bot. Jahrb. Syst., LIV, Beibl. No. 120, p. 14.]
- 1918 *Drepanocladus revolvens*. Heim, Arnold, & Gams, H. Interglaziale Bildungen bei Wildhaus. [Vierteljahr. naturforsch. Ges. Zürich, LXIII, p. 27.] Interglacial
- 1920 *D. revolvens*. Baker, Frank C. The life of the Pleistocene or glacial period. [Univ. of Illinois Bull., XVII, pp. 178, 184, 228, 241, 377.] Pleistocene
- 1922 *H. revolvens*. Travis, W. G. On peaty bands in the Wallasey sandhills. [Proc. Liverpool Geol. Soc., III, p. 209.] Peat
- 1923 *D. revolvens*. Baumberger, E., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, pp. 145, 335, 521.] Quaternary

***Drepanocladus scorpioides* (L.) Warnst.**

- 1896 *Hypnum scorpioides* L. Farneti R. Ricerche di briol. palaeont al periodo glaciale. [Atti del Istit. Bot. della Reale Univ. d. Pavia, Ser. 2, V, p. 55.] Glacial
- 1903 *H. scorpioides*. Range, Paul. Das Diluv. von Lübeck und seine Dryastone [Zeitschr. f. Naturwiss., LXXVI, p. 269.] Diluvial
- 1904 *H. scorpioides*. Geinitz, C., und Weber, C. A. Ueber ein Moostorflager der Rostocker Heide. [Arch. d. Ver. d. Fr. d. Naturgesch. in Mecklenburg, LVIII, p. 13.] Postglacial

- 1908 *Scorpidium scorpioides* (L.) Limpr. Weber, C. A. Pleistocene
Die Moostorfschichten zwischen Sarkau und
Cranz. [Engl. Bot. Jahrb., XLII, pp. 41, 44.]
- 1908 *Drepanocladus scorpioides*. Weber, C. A. Hypnum Pleistocene
turgescens Schimp. [Engl. Bot. Jahrb., XLII,
p. 239.]
Note. This is a correction of *D. turgescens* to
the present species, from p. 38 of the same
volume.
- 1908 *Amblystegium scorpioides* (L.) Lindb. Holst, N. O. Late glacial
Efterskörd från de senglaciala Lagren vid Top-
peladugård [Sver. geol. Undersökn. Arsbok,
II, No. 2, p. 19 bis.]
- 1909 *A. scorpioides*. Hartz, N. Bidrag til Danmarks Diluvial
tertiaere Flora. [Danmarks geol. Undersøgelse,
II Raekke, No. 20, p. 260.]
- 1909 *H. scorpioides*. Travis, W. G. Plant remains in Peat
peat at Aintree. [Trans. Liverpool Bot.
Soc., I, p. 5.]
- 1909 *Sc. scorpioides*. Schuster, J. Paläobot. Not. aus Schiefer-
Bayern. [Ber. bay. bot. Ges., XII, 1, p. 58 bis.] kohlen
- 1910 *A. scorpioides*. Hesselbo, A. Mosrester fra Diluvial
diluviet ved Skaerumhede. [Danmarks geol. Un-
dersøgelse, II Raekke, No. 25, p. 108.]
- 1911 *H. scorpioides*. Dixon, H. N., in Lewis, F. J. Arctic bed in
The plant remains in the Scottish peat mosses. peat, West
Part IV. [Trans. Roy. Soc. Edinb., XLVII, p. 830.] Shetland
- 1912 *H. scorpioides*. Dixon, H. N., in Warren, S. H. Late glacial
A late Glacial stage in the Lea Valley. [Quart.
Journ. Geol. Soc., LXVIII, p. 231.]
- 1912 *Sc. scorpioides*. Szafer, W. Eine Dryasflora bei Glacial
Krystynopol in Galizien. [Bull. int. Acad. Sci.
Cracovie d. sc. math. et nat., Sér. B. No. 2,
p. 1109.]
- 1914 *Sc. scorpioides*. Zmuda, A. J. Fossile Flora des Diluvial
Krakauer Diluviums. [Bull. int. Acad. Sci. Cra-
covie d. sc. math. et nat., Sér. B, No. 2 B, p. 250.]
- 1914 *H. scorpioides*. Weber, C. A. Die Mammutflora Glacial
von Borna. [Abh. Nat. Ver. Bremen, XXIII,
Heft 1, p. 24.]
- 1917 *H. scorpioides*. Weber, C. A. Die Pflanzenwelt Interglacial
des Ralutzer Beckentons [Bot. Jahrb. Syst.,
LIV, Beibl. Nr. 120, p. 14.]
- 1917 *Sc. scorpioides*. Rudolph, K. Untersuch. über den Recent
Aufbau böhmischer Moore. [Abh. k. k. zool.-bot.
Ges. Wien, IX, p. 83.]
- 1918 *Sc. scorpioides*. Heim, Arnold, & Gams, H. Interglacial
interglaziale Bildungen bei Wildhaus. [Viertel-
jahr. naturforsch. Ges. Zürich, LXIII, p. 27 bis.]
- 1922 *H. scorpioides*. Travis, W. G. On peaty bands in Peat
the Wallasey sandhills. [Proc. Liverpool Geol.
Soc., III, p. 209.]
- 1922 *Sc. scorpioides*. Jessen, Knud, og Rasmussen, R. Recent
Et Profil Gennem en Tørvemose paa Faerørne.
[Danmarks geol. Undersøgelse, IV Raekke, No. 13,
p. 12.]
- 1923 *Sc. scorpioides*. Baumberger, E., etc. Die diluvi- Quaternary
alen Schieferkohlen der Schweiz. [Beitr. Geol.
Schweiz, geotechn. Ser., Lief. 8, pp. 146, 337.]

Drepanocladus Sendtneri (Schimp.) Warnst.

- 1869 **Hypnum Sendtneri** Schimp. *Traité de Pal. végét.*, Tertiary I, p. 250.
Syn. H. Weberianum Goepp. ex Weber, C. Otto. Die Tertiärflora der niederrhein. Braunkohlenformation, in *Palaeontographica*, II, p. 227, t. XXV, f. 7, 10—13. (nec H. Weberianum Schimp.).
- 1896 **H. Sendtneri**. Farneti, R. *Ricerche di briol. palaeont. al periodo glaciale*. [Atti del Istit. Bot. della Reale Univ. d. Pavia, Ser. 2, V, p. 55.] Glacial
- 1904 **H. Sendtneri** (with some slight doubt). Bell, A. M. Implementiferous Sections at Wolvercote (Oxfordshire). [Quart. Journ. Geol. Soc., LX, p. 124.] Late glacial
- 1904 **H. Sendtneri** (or ? **H. Wilsoni**). Reid, Clement. East Norfolk Geology. [Trans. Norf. & Norw. Nats. Soc., VII, p. 293.] Preglacial
- 1905 **H. Sendtneri**. Neuweiler, E. Die prähistor. Pflanzenreste Mitteleuropas [Vierteljahr. naturforsch. Ges. Zurich, L, Heft 6, p. 39.] Pleistocene
- 1905 **H. Sendtneri** ? Neuweiler, E. Zur Interglazialflora der schweiz. Schieferkohlen. [Ber. d. schweizerisch. bot. Ges., Heft XV. Beilage. Neunter Ber. d. zürcherisch. bot. Ges., p. 98.] Interglacial
- 1909 **H. Sendtneri**. Travis, W. G. Plant remains in peat at Aintree. [Trans. Liverpool Bot. Soc., I, p. 5.] Peat
- 1910 **Amblystegium Sendtneri** (Schimp.) De Not. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 108.] Diluvial
- 1912 **H. Sendtneri**. Dixon, H. N., in Warren, S. H. A late Glacial stage in the Lea Valley. [Quart. Journ. Geol. Soc., LXVIII, p. 231.] Late glacial
- 1914 **Drepanocladus Sendtneri**. Weber, C. A. Die Mammutflora von Borna. [Abh. Nat. Ver. Bremen, XXIII, Heft 1, p. 22.] Glacial
- 1922 **H. Sendtneri**. Travis, W. G. On peaty bands in the Wallasey sandhills. [Proc. Liverpool Geol. Soc., III, p. 209.] Peat
- 1923 **D. Sendtneri**. Baumberger, E., etc. Die diluv. Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, pp. 84, 145, 336.] Quaternary
- 1925 **D. Sendtneri**. Dixon, H. N. Moss Remains in Russian Peat. [Journ. of Bot., LXIII, p. 370.] Interglacial

Drepanocladus trifarius (Web. & Mohr) Broth.

- 1905 **Hypnum trifarium** (Web. & Mohr). Neuweiler, E. Zur Interglazialflora der schweiz. Schieferkohlen. [Ber. d. schweizerisch. bot. Ges., Heft XV. Beilage. Neunter Ber. d. zürcherisch. bot. Ges., p. 97.] Interglacial
- 1908 **H. trifarium**. Weber, C. A. Die Moostorfschichten zwischen Sarkau und Cranz. [Engl. Bot. Jahrb., XLII, pp. 40, 41, 43.] Pleistocene
- 1909 **Calliergon trifarium** (Web. & Mohr) Kindb. Schuster, J. Paläobot. Not. aus Bayern. [Ber. bay. bot. Ges., XII, 1, p. 58.] Schieferkohlen

- 1912 *H. trifarium*. Stark, P. Beitr. zur Kenntn. der Glacial
eiszeitlich. Fl. und Fauna Badens. [Ber. natur-
forsch. Ges. Freiburg i. B., XIX, pp. 90, 116.]
- 1914 *Pseudocalliergon trifarium* (Web. & Mohr) Loeske. Diluvial
Zmuda, A. J. Fossile Flora des Krakauer Dilu-
viums. [Bull. int. Acad. Sci. Cracovie d. sc.
math. et nat., Sér. B. No. 2 B, p. 250.]
- 1917 *H. trifarium*. Rudolph, K. Untersuch. über den Recent
Aufbau böhmischer Moore. [Abh. k. k. zool.-bot.
Ges. Wien, IX, p. 83.]
- 1918 *Calliergon trifarium*. Heim, Arnold, & Gams, H. Interglacial
Interglaziale Bildungen bei Wildhaus. [Viertel-
jahr. naturforsch. Ges. Zürich, LXIII, p. 27.]
- 1923 *Calliergon trifarium*. Baumberger, E., etc. Die Quaternary
diluvialen Schieferkohlen der Schweiz. [Beitr. Geol.
Schweiz, geotechn. Ser., Lief. 8, pp. 84, 145,
336, 521.]

Drepanocladus Tundrae (Arn.)

- 1911 ? *Calliergon Tundrae* (Arn.). Zmuda, A. J. in Early
Szafer, W. Ueber eine alt-diluviale Flora in diluvial
Krystynopol in Wolhynien. [Kosmos, XXXVI,
p. 338.]

Drepanocladus turgescens (Jens.) Broth.

- 1904 *Hypnum turgescens* Jens. Reid, Clement. East Preglacial
Norfolk Geology. [Trans. Norfolk & Norw. Nats.
Soc., VII, p. 293.]
- 1908 *H. turgescens*. Weber, C. A. Die Moostorfschichten Pleistocene
..... zwischen Sarkau und Cranz. [Engl.
Bot. Jahrb., XLII, p. 38 sqq.]
Note. This was corrected later, in the same
volume, to D. Sendtneri.
- 1909 *Amblystegium turgescens* (Jens.) Lindb. Nørregaard, Late glacial
E. M. Et senglacialt fra Dejbjerg Bakker.
[Meddel. fra Dansk geol. Fören., No. 15, p. 325.]
- 1910 *A. turgescens*. Hesselbo, A. Mosrester fra Diluviet Diluvial
ved Skaerumhede. [Danmarks geol. Undersøgelse,
II Raekke, No. 25.]
- 1912 *H. turgescens*. Dixon, H. N., in Warren, S. H. Late glacial
A late Glacial stage in the Lea Valley. [Quart.
Journ. Geol. Soc., LXVIII, p. 231.]
- 1912 *Drepanocladus turgescens*. Stark, P. Beitr. zur Glacial
Kenntn. der eiszeitlich. Fl. und Fauna Badens.
[Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 90.]
- 1914 *Pseudocalliergon turgescens* (Jens.) Loeske. Zmuda, Diluvial
A. J. Fossile Flora des Krakauer Diluviums.
[Bull. int. Acad. Sci. Cracovie d. sc. math. et
nat., Sér. B, No. 2 B, p. 250.]
- 1917 *H. turgescens*. Weber, C. A. Die Pflanzenwelt Interglacial
des Rabutzer Beckentons [Bot. Jahrb. Syst.,
LIV, Beibl. No. 120, p. 14.]
- 1923 *Calliergon turgescens* (Jens.) Kindb. Baumberger, Quaternary
E., etc. Die diluvialen Schieferkohlen der Schweiz.
[Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8,
pp. 145, 337, 521.]

Drepanocladus vernicosus (Lindb.) Warnst.

- 1904 *Hypnum vernicosum* Lindb. Geinitz, E., und Weber, C. A. Ueber ein Moostorflager der Rostocker Heide. [Arch. d. Ver. d. Fr. d. Naturgesch. in Mecklenburg, LVIII, p. 13.] Postglacial
- 1908 *H. vernicosum* ? Weber, C. A. Die Moostorfschichten zwischen Sarkau und Cranz. [Engl. Bot. Jahrb., XLII, pp. 40, 41, 43.] Pleistocene
- 1911 *Drepanocladus vernicosus*. Stoller, J. Beitr. zur Kenntn. der diluv. Flora Norddeutschlands. Jahrb. d. Kgl. preuss. geol. Landesanstalt, XXXII, T. 1, H. 1, p. 135.] Diluvial
- 1912 *D. vernicosus*. Szafer, W. Eine Dryasflora bei Krystynopol in Galizien. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2, p. 1106.] Glacial
- 1914 *Limprichtia vernicosa* (Lindb.) Loeske. Zmuda, A. J., Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 249.] Diluvial
- 1914 *H. vernicosum*. Weber, C. A. Die Mammutflora von Bornä. [Abh. Nat. Ver. Bremen, XXIII, Heft 1, p. 21.] Glacial
- 1917 *D. vernicosus*. Weber, C. A. Die Pflanzenwelt des Rabutzer Beckentons [Bot. Jahrb. Syst., LIV, Beibl. Nr. 120, p. 14.] Interglacial
- 1922 *H. vernicosum*. Travis, W. G. On peaty bands in the Wallasey sandhills. [Proc. Liverpool Geol. Soc., III, p. 209.] Peat
- 1925 *D. vernicosus*. Dixon, H. N. Moss Remains in Russian Peat. [Journ. of Bot., LXIII, p. 370.] Interglacial

Drepanocladus Wilsoni (Schimp.) Roth.

- 1904 *Hypnum Wilsoni* Schimp. ? Reid, Clement. East Norfolk Geology. [Trans. Norf. & Norw. Nats. Soc., VII, p. 293.] Preglacial
Note. Possibly *D. Sendtneri* (Schimp.).
- 1908 *Drepanocladus Wilsoni*. Stoller, J. Beitr. zur Kenntn. der diluv. Flora Norddeutschlands. [Jahrb. d. Kgl. preuss. geol. Landesanstalt, XXIX, p. 119.] Diluvial
- 1909 *H. Wilsoni*. Travis, W. G. Plant remains in peat at Aintree. [Trans. Liverpool Bot. Soc., I, p. 5.] Peat
- 1910 *D. Wilsoni*. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelser, II Raekke, No. 25, p. 108.] Diluvial
- 1912 *H. Wilsoni*. Dixon, H. N., in Warren, S. H. A late Glacial stage in the Lea Valley. [Quart. Journ. Geol. Soc., LXVIII, p. 231.] Late glacial
- 1914 *H. Wilsoni*. Weber, C. A. Die Mammutflora von Bornä. [Abh. Nat. Ver. Bremen, XXIII, Heft 1, p. 22.] Glacial
- 1918—20 *D. Sendtneri* var. *Wilsoni* (Schimp.). Docutrowsky, V. S., and Kudriashev, V. Results of Russian studies on peat moors. [Reports on Peat, 4.] Interglacial

Drepanocladus, undetermined species.

- 1923 *Drepanocladus* sp. Baumberger, E., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, pp. 145, 336.] Quaternary
- 1925 *Drepanocladus* sp. Dixon, H. N. Moss Remains in Russian Peat. [Journ. of Bot., LXIII, p. 370.] Novaya Zemlya peat

Calliergon (Sull.) Kindb.**Calliergon cordifolium** (Hedw.) Kindb.

- 1902 *Amblystegium cordifolium* (Hedw.) De Not. Hartz, N., Bidrag til Danmarks senglaciale Fl. og Fauna. [Danmarks geol. Undersøgelse, II Raekke, No. 11, p. 15.] Late glacial
- 1904 *Calliergon cordifolium*. Bell, A. M. Implementiferous Sections at Wolvercote (Oxfordshire). [Quart. Journ. Geol. Soc., LX, p. 124.] Late glacial
- 1909 *A. cordifolium*. Hartz, N. Bidrag til Danmarks tertiære Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 108.] Diluvial
- 1910 *A. cordifolium*. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 108.] Diluvial

Calliergon diluvianum (Schimp.) Dix., comb. nov.

- 1869 *Hypnum diluvianum* Schimp. Traité de Pal. Végét., I, p. 253. Quaternary lignites of Switzerland
- Note. Schimper compares this with *C. giganteum*. Gams considers it may be *C. sarmentosum* (cfr. Baumberger, E., etc., in Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, p. 520).
- 1923 *H. diluvianum*. Baumberger, E., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, p. 521.] Quaternary

Calliergon giganteum (Schimp.) Kindb.

- 1898 *Amblystegium giganteum* (Schimp.) De Not. Andersson, Gunnar. Stud. öfver Finlands Kvartärflora. [Bull. de la Commission géol. de Finlande, Tome 2, No. 8, p. 135.] Quaternary
- 1902 *A. giganteum*. Hartz, N. Bidrag til Danmarks senglaciale Fl. og Fauna. [Danmarks geol. Undersøgelse, II Raekke, No. 11, p. 15.] Late glacial
- 1903 *Hypnum giganteum* Schimp. Range, Paul. Das Diluvialgebiet von Lübeck und seine Drystone [Zeitschr. f. Naturwiss., LXXVI, p. 256.] Diluvial
- 1904 *Calliergon giganteum*. Bell, A. M. Implementiferous Sections at Wolvercote (Oxfordshire). [Quart. Journ. Geol. Soc., LX, p. 124.] Late glacial
- 1904 *H. giganteum*. Weber, C. A., in Müller, G. Ueber eine frühdiluviale Flora bei Lüneburg. [Abh. Kgl. preuss. geol. Landesanstalt und Bergakad., Heft 40, p. 16.] Preglacial
- 1904 *H. giganteum*. Geinitz, E., und Weber, C. A. Ueber ein Moostorflager der Rostocker Heide. Postglacial

- [Arch. d. Ver. d. Fr. d. Naturgesch. in Mecklenburg, LVIII, p. 13.]
- 1905 *H. giganteum*. Neuweiler, E. Die prähistor. Pflanzenreste Mitteleuropas [Vierteljahr. naturforsch. Ges. Zürich, L, Heft 6, p. 39 bis.] Pleistocene
- 1905 *H. giganteum*, var. Neuweiler, E. Zur Interglazialflora der schweizerisch. Schieferkohlen. [Ber. d. schweizerisch. bot. Ges., Heft XV. Beilage. Neunter Ber. d. zürcherisch. bot. Ges., p. 96.] Interglacial
- 1908 *A. giganteum*. Holst, N. O. Efterskörd från de senglaciala Lagren vid Toppeladugård [Sver. geol. Undersökning Arsbok, II, No. 2, p. 19.] Late glacial
- 1908 *H. giganteum*. Weber, C. A. Die Moostorfschichten zwischen Sarkau und Cranz. [Engl. Bot. Jahrb., XLII, pp. 40, 41, 44.] Pleistocene
- 1909 *A. giganteum*. Hartz, N. Bidrag til Danmarks tertiære Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 260.] Diluvial
- 1909 *C. giganteum*. Schuster, J. Palaeobot. Not. aus Bayern. [Ber. bayer. bot. Ges., XII, 1, p. 58.] Schieferkohlen
- 1910 *A. giganteum*. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 108.] Diluvial
- 1911 *H. giganteum*. Dixon, H. N., in Lewis, F. J. The plant remains in the Scottish peat mosses. Part IV. [Trans. Roy. Soc. Edinb., XLVII, p. 830.] Recent Ice-land peat
- 1912 *H. giganteum*. Dixon, H. N., in Warren, S. H. A late Glacial stage in the Lea Valley. [Quart. Journ. Geol. Soc., LXVIII, p. 231.] Late glacial
- 1912 *C. giganteum*. Szafer, W. Eine Dryasflora bei Krystynopol in Galizien. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2, p. 1108.] Glacial
- Note. Zmuda gives as a synonym "*C. Richardsoni* Zmuda (nicht Kindb.) in Kosmos, XXXVI, p. 337."
- 1912 *H. giganteum*. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 116.] Glacial
- 1914 *C. giganteum*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B. No. 2 B, p. 249.] Diluvial
- 1914 *H. giganteum*. Weber, C. A. Die Mammutflora von Bornä. [Abh. Nat. Ver. Bremen, XXIII, Heft 1, p. 24.] Glacial
- 1917 *C. giganteum*. Weber, C. A. Die Pflanzenwelt des Rabutzer Beckentons.... [Bot. Jahrb. Syst., LIV, Beibl. Nr. 120, p. 14.] Interglacial
- 1917 *H. giganteum*. Rudolph, K. Untersuch. über den Aufbau böhmischer Moore. [Abh. k. k. zool.-bot. Ges., Wien, IX, p. 84.] Recent
- 1918 *C. giganteum*. Beyle, M. Ueber einige Ablag. fossiler Pflanzen der Hamburger Gegend. Zweiter Teil. [Jahrb. der Hamburg. wiss. Anst., XXXVI, p. 40.] Glacial
- 1918 *C. giganteum*. Heim, Arnold, & Gams, H. Interglaziale Bildungen bei Wildhaus. [Vierteljahr. naturforsch. Ges. Zürich, LXIII, p. 27 bis.] Interglacial

- 1922 *H. giganteum*. Travis, W. G. On peaty bands in the Wallasey sandhills. [Proc. Liverpool Geol. Soc., III, p. 209.] Peat
- 1923 *C. giganteum*. Baumberger, E., etc., Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, pp. 84, 145, 336, 521.] Quaternary
- 1924 *H. giganteum*. Beyle, M. Ueber einige Ablag. fossiler Pflanzen der Hamburger Gegend. Dritter Teil. [Mitteil. aus dem Mineralog-geol. Staatsinstitut, Heft VI, p. 26.] Glacial

Calliergon Richardsoni (Mitt.) Kindb.

- 1903 *Hypnum Richardsoni* (Mitt.) Lesq. & James. Holzinger, J. M. On some fossil mosses. [Bryologist, VI, p. 94.] Pleistocene, below Kansas drift
- 1904 *H. Richardsoni*? Reid, Clement. East Norfolk Geology. [Trans. Norfolk & Norwich Nat. Soc., VII, p. 293.] Preglacial
- 1911 *Calliergon Richardsoni*. Zmuda, A. J., in Szafer, W. Ueber eine alt-diluv. Flora in Krystynopol in Wolhynien. [Kosmos, XXXVI, p. 337.] Early diluvial
Note. cfr. note on *C. giganteum* (1912, Szafer) above.
- 1912 *H. Richardsoni*. Whitehead, Goodchild, and Reid. Some notes on "moor-log" [Essex Naturalist, XVI, p. 56.] Marine peat deposit
- 1914 *H. Richardsoni*. Weber, C. A. Die Mammutflora von Borna. [Abh. Nat. Ver. Bremen, XXIII, Heft 1, p. 24.] Glacial
- 1914 *C. Richardsoni*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B, p. 249.] Diluvial
- 1917 *H. Richardsoni*. Weber, C. A. Die Pflanzenwelt des Rabutzer Beckentons [Bot. Jahrb. Syst., LIV, Beibl. Nr. 120, p. 14.] Interglacial
- 1920 *C. Richardsoni*. Baker, Frank C. The life of the Pleistocene or glacial period. [Univ. of Illinois Bull., XVII, pp. 228, 241, 377.] Pleistocene
- 1925 *C. Richardsoni*. Dixon, H. N. Moss Remains in Russian Peat. [Journ. of Bot., LXIII, p. 370.] Peat in Nova Zemlya

Calliergon sarmentosum (Wahl.) Kindb.

- 1869 *Hypnum sarmentosum* Wahl. Schimper, W. P. Traité de Pal. Végét., I, p. 253, bis. Quaternary lignites, Switzerland; and glacial deposits in Württemberg
- 1888 *Acroceratium sarmentosum* (Wahl.) Mitt. Reid. Clement, and Ridley, H. N. Fossil Arctic Plants from Hoxne, in Suffolk. [Geol. Mag., Decade III, vol. V, p. 444.] Glacial
- 1896 *H. sarmentosum*. Farneti, R. Ricerche di briol. palaeont. al periodo glaciale. [Atti del Istit. Bot. della Reale Univ. d. Pavia, Ser. 2, V, p. 57.] Glacial

- 1896 *H. sarmentosum*. Engel, Th. Geognost. Wegweiser Diluvial
durch Württemberg. 2e Aufl., p. 436.
- 1912 *H. sarmentosum*? Dixon, H. N., in Warren, S. H. Late glacial
A late Glacial stage in the Lea Valley. [Quart.
Journ. Geol. Soc., LXVIII, p. 231.]
- 1912 *Hypnum* cfr. *sarmentosum*. Stark, P. Beitr. zur Glacial
Kenntn. der eiszeitlich. Fl. und Fauna Badens.
[Ber. naturforsch. Ges. Freiburg i. B., XIX,
p. 116.]
- 1914 *Calliergon sarmentosum*. Zmuda, A. J. Fossile Diluvial
Flora des Krakauer Diluviums. [Bull. int. Acad.
Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B,
p. 249.]
- 1918 *C. sarmentosum*. Heim, Arnold, & Gams, H. Interglacial
glaziale Bildungen bei Wildhaus. [Vierteljahr. nat-
urforsch. Ges. Zürich, LXIII, p. 28.]
- 1923 *C. sarmentosum*. Baumberger, E., etc. Die dilu- Quaternary
vialen Schieferkohlen der Schweiz. [Beitr. Geol.
Schweiz, geotechn. Ser., Lief. 8, p. 521.]

Calliergon stramineum (Dicks.) Kindb.

- 1897 *Calliergon stramineum*. Beck, R. und Weber, C. A. Early
Ueber ein Torflager des sächsischen Erz-
gebirges. [Zeitschr. d. D. geol. Ges., XLIX, p. 667.] diluvial
- 1898 *Amblystegium stramineum* (Dicks.) De Not. Quaternary
Andersson, Gunnar. Stud. öfver Finlands Kvar-
tärflora. [Bull. de la Commission géol. de Fin-
lande, Tome 2, No. 8, p. 135.]
- 1904 *C. stramineum*. Bell, A. M. Implementiferous Sec- Late glacial
tions at Wolvercote (Oxfordshire). [Quart. Journ.
Geol. Soc., LX, p. 124.]
- 1907 *Hypnum stramineum* Dicks. Dixon, H. N., in Peat
Lewis, F. J. Summary of Progress for 1907,
p. 99. [Mem. Geol. Survey.]
- 1908 *A. stramineum*. Holst, N. O. Efterskörd från Late glacial
de senglaciala Lagren vid Toppeladugård.....
[Sver. geol. Undersökning Arsbok, II, No. 2, p. 19.]
- 1910 *A. stramineum*. Hesselbo, A. Mosrester fra Dilu- Diluvial
viet ved. Skaerumhede. [Danmarks geol. Under-
søgelse, II Raekke, No. 25, p. 108.]
- 1912 *H. stramineum*. Stark, P. Beitr. zur Kenntn. der Glacial
eiszeitlich. Fl. und Fauna Badens. [Ber. nat-
urforsch. Ges. Freiburg i. B., XIX, p. 116.]
- 1912 *H. stramineum*. Dixon, H. N., in Warren, S. H. Late glacial
A late Glacial stage in the Lea Valley. [Quart.
Journ. Geol. Soc., LXVIII, p. 231.]
- 1914 *C. stramineum*. Zmuda, A. J. Fossile Flora des Diluvial
Krakauer Diluviums. [Bull. int. Acad. Sci. Cra-
covie d. sc. math. et nat., Sér. B, No. 2 B, p. 249.]
- 1918—20 *C. stramineum*. Docturowsky, V. S. and Ku- Postglacial
driashev, V. Results of Russian studies on peat
moors. [Reports on Peat, 4.]
- 1922 *C. stramineum*. Jessen, Knud, og Rasmussen, R. Recent
Et Profil Gennem en Tørvemose paa Faerørne.
[Danmarks geol. Undersøgelse, IV Raekke, No. 13,
p. 12.]

Calliergon undetermined species.

- 1869 **Hypnum stramineum** Dicks. or near it. Schimper, *Traité de Pal. Végét.*, I, p. 253.] Quaternary lignites of Switzerland
 1905 **Hypnum**, § **Calliergon** sp. Neuweiler, E. Zur Interglazialflora der schweizerisch. Schieferkohlen. [Ber. d. schweizerisch. bot. Ges., Heft XV. Beilage. Neunter Ber. d. zürcherisch bot. Ges., p. 97.] Interglacial
 1923 **Calliergon** sp. Baumberger, E., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, p. 337.] Quaternary

Acrocladium Mitt.**Acrocladium cuspidatum** (L.) Lindb.

- 1888 **Acroceratium cuspidatum** (L.) Mitt. Reid, Clement, and Ridley, H. N. Fossil Arctic Plants from.... Hoxne, in Suffolk. [Geol. Mag., Decade III, vol. V, p. 444.] Glacial
 1898 **Acrocladium cuspidatum**. Andersson, Gunnar. Stud. öfver Finlands Kvartärflora. [Bull. de la Commission géol. de Finlande, Tome 2, No. 8, p. 194.] Quaternary
 1899 **A. cuspidatum**. Bertrand, C. E. Description d'un échantillon de charbon papyracé [Ann. Soc. Géol. du Nord, XXVIII, p. 186.] Pleistocene
 1904 **A. cuspidatum**. Bell, A. M. Implementiferous Sections at Wolvercote (Oxfordshire). [Quart. Journ. Geol. Soc., LX, p. 124.] Late glacial
 1909 **A. cuspidatum**. Hartz, N. Bidrag til Danmarks tertiære Flora. [Danmarks geol. Undersøgelse, II Række, No. 20, p. 260.] Interglacial
 1910 **Hypnum cuspidatum** L. Dixon, H. N. Some "Neolithic" moss remains from Fort William. [Ann. Scott. Nat. Hist., 1910, p. 105.] Postglacial
 1911 **H. cuspidatum**. Dixon, H. N., in Lewis, F. J. The plant remains in the Scottish peat mosses. Part IV. [Trans. Roy. Soc. Edinb., XLVII, p. 831.] Recent. Ice-land peat
 1912 **H. cuspidatum**. Dixon, H. N., in Warren, S. H. A late Glacial stage in the Lea Valley. [Quart. Journ. Geol. Soc., LXVIII, p. 231.] Late glacial
 1912 **H. cuspidatum**. Stark, P. Beitr. zur Kenntn. der eiszzeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 116.] Glacial
 1912 **A. cuspidatum**. Hawkesworth, E. A pre-glacial Lake-bed near Northallerton. [Naturalist, 1912, p. 204.] Preglacial
 1922 **H. cuspidatum**. Travis, W. G. On peaty bands in the Wallasey sandhills. [Proc. Liverpool Geol. Soc., III, p. 209.] Peat
 1923 **A. cuspidatum**? Baumberger, E., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, pp. 146, 337, 521.] Quaternary
 1924 **H. cuspidatum**. Beyle, M. Ueber einige Ablag. fossiler Pflanzen der Hamburger Gegend. Dritter Teil. [Mitteil. aus dem Mineralog-geol. Staatsinstitut, Heft VI, pp. 23, 26.] Glacial

[*Acrocladium squarrosus* (L.) Lindb., Jessen & Rasmussen in Danmarks geol. Undersøgelse, IV Raekke, No. 13, p. 12 (1922) is an unknown species, and probably a *lapsus calami*.]

***Acrocladium* undetermined species.**

- 1908 *Acrocladium* sp. Holst, N. O. Efterskörd från Lateglacial
de senglaciala Lagren vid Toppeladugård
[Sver. geol. Undersökning Arsbok, II, p. 16.]

***Hygrohypnum* Lindb.**

(*Hypnum* § *Limnobium* auct.).

***Hygrohypnum alpestre* (Sw.) Loeske.**

- 1903 *Hypnum alpestre* Sw. Range, Paul. Das Diluvial- Diluvial
gebiet von Lübeck und seine Dryastone
[Zeitschr. für Naturwiss., LXXVI, p. 254.]

***Hygrohypnum dilatatum* (Wils.) Loeske.**

- 1910 *Amblystegium dilatatum* (Wils.) Lindb. Hesselbo, Diluvial
A. Mosrester fra Diluviet ved Skaerumhede. [Dan-
marks geol. Undersøgelse, II Raekke, No. 25,
p. 108.]
1912 *Hypnum dilatatum* Wils. Stark, P. Beitr. zur Glacial
Kenntn. der eiszeitlich. Fl. und Fauna Badens.
[Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 90.]

***Hygrohypnum lignitorum* (Schimp.) Dix., comb. nov.**

- 1869 *Hypnum lignitorum* Schimp. Traité de Pal. Végét., Quaternary
I, p. 253. lignites,
Note. Neuweiler in Ber. d. Zürcher. bot. Ges. Dürnten,
XV, p. 94 (1905) says "Zwischen *H. palustre* und Switzerland
H. ochraceum stehend". This is in agreement with
Schimper's note; but Gams in his work on "Die
Schieferkohlen der Schweiz", p. 28, cites Meylan
as referring it to *Calliergon trifarium*, which does
not seem probable.

***Hygrohypnum molle* (Dicks.) Loeske.**

- 1910 *Amblystegium molle* (Dicks.) Lindb. ? Hesselbo, A. Diluvial
Mosrester fra Diluviet ved Skaerumhede. [Dan-
marks geol. Undersøgelse, II Raekke, No. 25,
p. 108.]
1912 *Hypnum molle* Dicks. Dixon, H. N., in Warren, Lateglacial
S. H. A late Glacial stage in the Lea Valley.
[Quart. Journ. Geol. Soc., LXVIII, p. 231.]

***Hygrohypnum ochraceum* (Turn.) Loeske.**

- 1869 *Hypnum ochraceum* Turn. Schimper, W. P. Traité Quaternary
de Pal. Végét., I, p. 253. lignites,

- 1912 **Hyp. ochraceum**. Stark, P. Beitr. zur Kenntn. Glacial
der eiszeitlich. Fl. und Fauna Badens. [Ber. natur-
forsch. Ges. Freiburg i. B., XIX, p. 90.]
- 1914 **Hygr. ochraceum**. Zmuda, A. J. Fossile Flora des Diluvial
Krakauer Diluviums. [Bull. int. Acad. Sci. Cra-
covie d. sc. math. et nat., Sér. B, No. 2 B,
p. 250.]

Hygrohypnum palustre (Huds.) Loeske.

- 1905 **Hypnum palustre** Huds. Neuweiler, E. Die prä- Pleistocene
histor. Pflanzenreste Mitteleuropas [Vier-
teljahr. naturforsch. Ges. Zürich, L, Heft 6,
p. 39.]
- 1910 **Hyp. palustre**. Dixon, H. N. Some "Neolithic" Postglacial
moss remains from Fort William. [Ann. Scott.
Nat. Hist., 1910, p. 105.]
Note.. The species is a little doubtful.
- 1923 **Hygr. palustre**. Baumberger, E., etc. Die diluvi- Quaternary
alen Schieferkohlen der Schweiz. [Beitr. Geol.
Schweiz, geotechn. Ser., Lief. 8, p. 336.]
- 1923 **Hygrohypnum** *cf.* **palustre**. Baumberger, op. cit., Quaternary
pp. 145, 336.

Hygrohypnum Smithii (Sw.) Broth.

- 1912 **Hypnum arcticum** Sommerf. Stark, P. Beitr. zur Glacial
Kenntn. der eiszeitlich. Fl. und Fauna Badens.
[Ber. naturforsch. Ges. Freiburg i. B., XIX. p. 90.]

Campylium (Sull.) Bryhn.

Campylium chrysophyllum (Brid.) Bryhn.

- 1904 **Campylium chrysophyllum**. Bell, A. M. Implemen- Lateglacial
tiferous Sections at Wolvercote (Oxfordshire).
[Quart. Journ. Geol. Soc., LX, p. 124.]
- 1910 **Amblystegium chrysophyllum** (Brid.) De Not. Hes- Diluvial
selbo, A. Mosrester fra Diluviet ved Skaerumhede.
[Danmarks geol. Undersøgelse, II Raekke, No. 25,
p. 108.]
- 1914 **Hypnum chrysophyllum** Brid. Weber, C. A. Die Glacial
Mammutflora von Borna. [Abh. Nat. Ver. Bremen,
XXIII, Heft 1, p. 19.]

Campylium helodes (Spr.) Broth.

- 1907 **Hypnum elodes** Spr.? Hartmann, F. Die Fossile Diluvial
Flora von Ingramsdorf, p. 25.
- 1911 **H. elodes**. Dixon, H. N., in Lewis, F. J. The West Shet-
plant remains in the Scottish peat mosses. Part land peat,
IV. [Trans. Roy. Soc. Edinb., XLVII, p. 830.] arctic bed.

Campylium insubricum (Farneti) Dix., comb. nov.

- 1896 **Hypnum insubricum** sp. nov. Farneti, R. Ricerche Glacial
di briol. palaeont al periodo glaciale. [Atti
del Istit. Bot. della Reale Univers. di Pavia,
Ser. II, vol. V, p. 53, t. IV.]

Note. The author refers this to *Campylium*.

Campylium polygamum (Bry. eur.) Bryhn.

- 1904 *Hypnum polygamum* (Bry. eur.) Wils. Reid, Clement. East Norfolk Geology. [Trans. Norf. & Norw. Nats. Soc., VII, p. 293.] Preglacial
- 1905 *H. polygamum*. Neuweiler, E. Zur Interglazialflora der schweizerisch. Schieferkohlen. [Ber. d. schweizerisch. bot. Ges., Heft XV. Beilage. Neunter Ber. d. Zürcherisch. bot. Ges., p. 98.] Interglacial
- 1909 *H. polygamum*. Travis, W. G. Plant remains in peat at Aintree. [Trans. Liverpool Bot. Soc., I, p. 5.] Peat
- 1909 *Amblystegium polygamum* Bry. eur. Hartz, N. Bidrag til Danmarks tertiære Flora. [Danmarks geol. Undersøgelse, II Række, No. 20, p. 260.] Interglacial
- 1910 *A. polygamum*. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Række, No. 25, p. 108.] Diluvial
- 1912 *A. polygamum*. Dixon, H. N., in Warren, S. H. A late Glacial stage in the Lea Valley. [Quart. Journ. Geol. Soc., LXVIII, p. 231.] Late glacial
- 1914 *A. polygamum*. Weber, C. A. Die Mammutflora von Borna. [Abh. Nat. Ver. Bremen, XXIII, Heft 1, p. 20.] Glacial
- 1923 *Campylium polygamum*. Baumberger, E., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, p. 335.] Diluvial

Campylium protensum (Brid.) Broth.

- 1902 *Amblystegium protensum* Lindb. Hartz, N. Bidrag til Danmarks senglaciale Flora og Fauna. [Danmarks geol. Undersøgelse, II Række, No. 11, p. 11.] Late glacial
- 1910 *A. protensum*. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Række, No. 25, p. 108.] Diluvial
- 1912 *Hypnum protensum* Brid. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 116.] Glacial
- 1914 *H. protensum*. Weber, C. A. Die Mammutflora von Borna. [Abh. Nat. Ver. Bremen, XXIII, Heft 1, p. 20.] Glacial

Campylium Sommerfeltii (Myr.) Bryhn.

- 1909 *Campylium Sommerfeltii*. Hartz, N. Bidrag til Danmarks tertiære Flora. [Danmarks geol. Undersøgelse, II Række, No. 20, p. 260.] Interglacial

Campylium stellatum (Schreb.) Lang. & Jens.

- 1888 *Campylium stellatum*. Reid, Clement, and Ridley, H. N. Fossil Arctic Plants from Hoxne, in Suffolk. [Geol. Mag., Decade III, Vol. V, p. 444.] Glacial
- 1902 *Amblystegium stellatum* (Schreb.) Lindb. Hartz, N. Bidrag til Danmarks senglaciale Flora og Fauna. [Danmarks geol. Undersøgelse, II Række, No. 11, p. 15.] Late glacial

- 1904 *C. stellatum*. Weber, C. A., in Müller G. Ueber Preglacial
eine frühdiluviale Flora bei Lüneburg. [Abh.
Kgl. preuss. geol. Landesanstalt und Bergakad.,
Heft 40, p. 16.]
- 1904 *Hypnum stellatum* Schreb. Geinitz, E., und Weber, Postglacial
C. A. Ueber ein Moostorflager der Rostocker
Heide. [Arch. d. Ver. d. Fr. d. Naturgesch. in
Mecklenburg, LVIII, p. 13.]
- 1907 *H. stellatum*? Hartmann, F. Die Fossile Flora von Diluvial
Ingramsdorf, p. 14.
- 1908 *H. stellatum*. Weber, C. A. Die Moostorfschich- Recent
ten zwischen Sarkau und Cranz. [Engl.
Bot. Jahrb., XLII, p. 43.]
- 1909 *C. stellatum*. Norregaard, E. M. Et senglacialt Late glacial
fra Dejbjerg Bakker [Meddel. fra Dansk
geol. Fören., No. 15, p. 326.]
- 1912 *H. stellatum*. Dixon, H. N., in Warren, S. H. Late glacial
A late Glacial stage in the Lea Valley. [Quart.
Journ. Geol. Soc., LXVIII, p. 231.]
- 1912 *H. stellatum*. Stark, P. Beitr. zur Kenntn. der Glacial
eiszeitlich. Fl. und Fauna Badens. [Ber. natur-
forsch. Ges. Freiburg i. B., XIX, p. 116.]
- 1914 *H. stellatum*. Weber, C. A. Die Mammutflora Glacial
von Borna. [Abh. Nat. Ver. Bremen, XXIII,
Heft 1, p. 20.]
- 1914 *C. stellatum*. Zmuda, A. J. Fossile Flora des Glacial
Krakauer Diluviums. [Bull. int. Acad. Sci. Cra-
covie d. sc. math. et nat., Sér. B, No. 2B,
p. 249.]
- 1915 *H. stellatum* (with some slight doubt). Camus, F. Glacial
Sur les mousses trouvées dans un mammoth.
[Compt. Rend. Acad. Par., CLX, p. 843.]
- 1917 *H. stellatum*. Rudolph, K. Untersuch. über den Recent
Aufbau böhmischer Moore. [Abh. k. k. zool.-bot.
Ges. Wien, IX, p. 84.]

Campylium undetermined species.

- 1923 *Campylium* sp. Baumberger, E., etc. Die dilu- Quaternary
vialen Schieferkohlen der Schweiz. [Beitr. Geol.
Schweiz, geotechn. Ser., Lief. 8, p. 335.]

Hyocomium Bry. eur.

Hyocomium flagellare (Dicks.) Bry. eur.

- 1910 *Hyocomium flagellare*. Dixon, H. N. Some "Neoli- Postglacial
thic" moss remains from Fort William. [Ann.
Scott. Nat. Hist., 1910, p. 105.]
- 1919 *H. flagellare*. Gadeceau, E. Les Forêts submergées Postglacial
de Belle-Ile-en-mer. [Bull. biol. de la France,
etc., LIII, p. 295.]

Ctenidium (Schimp.) Mitt.

Ctenidium molluscum (Hedw.) Mitt.

- 1911 *Hypnum molluscum* Hedw. Dixon, H. N., in Le- Recent, ice-
wis, F. J. The plant remains in the Scottish land peat
peat mosses. Part IV. [Trans. Roy. Soc. Edinb.,
XLVII, p. 831.]

- 1923 *C. molluscum*. Baumberger, E., etc. Die diluvialen Quaternary Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, pp. 145, 335.]

Rhytidiadelphus (Lindb.) Warnst.

Rhytidiadelphus loreus (Dill.) Warnst.

- 1910 *Hylocomium loreum* (Dill.) Bry. eur. Dixon, H. N. Postglacial
Some "Neolithic" moss remains from Fort Wil-
ham. [Ann. Scott. Nat. Hist., 1910, p. 105.]
1924 *Hyl. loreum*. Burrell, W. H. Pennine Peat. [Natu- Recent
ralist, 1924, p. 148.]

Rhytidiadelphus squarrosus (L.) Warnst.

- 1853 *Hypnum squarrosus* L. Goepfert, H. R. Ueber Amber
die Bernstein Flora. [Monatsber. d. Berliner Akad.,
1853, p. 459.]
1888 *Hylocomium squarrosus* (L.) Bry. eur. Reid, Cle- Lateglacial
ment, and Ridley, H. N. Fossil Arctic Plants from
..... Horne, in Suffolk. [Geol. Mag., Decade III,
Vol. V, p. 444.]
1909 *Hyl. squarrosus*. Hartz, N. Bidrag til Danmarks Interglacial
tertiære Flora. [Danmarks geol. Under-
søgelse, II Raekke, No. 20, p. 260.]
1910 *Hyl. squarrosus*. Dixon, H. N. Some "Neolithic" Postglacial
moss remains from Fort William. [Ann. Scott.
Nat. Hist., 1910, p. 105.]
1922 *Hyl. squarrosus*. Jessen, Knud, og Rasmussen, R. Recent
Et Profil Gennem en Tørvemose paa Faerørne.
[Danmarks geol. Undersøgelse, IV Raekke, No. 13,
p. 12.]
1924 *Hyl. squarrosus*. Burrell, W. H. Pennine Peat. Recent
[Naturalist, 1924, p. 148.]

Rhytidiadelphus triqueter (L.) Warnst.

- 1898 *Hylocomium triquetrum* (L.) Bry. eur. Andersson, Quaternary
Gunnar. Stud. öfver Finlands Kvartärflora.
[Bull. de la Commission géol. de Finlande, Tome
2, No. 8, p. 136.]
1905 *Hyl. triquetrum*. Neuweiler, E. Die prähistor. Pleistocene
Pflanzenreste Mitteleuropas [Vierteljahr. na-
turforsch. Ges. Zürich, L, Heft 6, p. 38.]
1911 *Hyl. triquetrum*. Dixon, H. N., in Lewis, F. J. Recent. Ice
The plant remains in the Scottish peat mosses. land peat
Part IV. [Trans. Roy. Soc. Edinb., XLVII, p. 831.]
1914 *Rhytidiadelphus triqueter*. Zmuda, A. J. Fossile Diluvial
Flora des Krakauer Diluviums. [Bull. int. Acad.
Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B,
p. 249.]
1918—20 *R. triqueter*. Docturovsky, V. S., and Kudria- Postglacial
schev, V. Results of Russian studies on peat
moors. [Reports on Peat, 4.]
1920 *Hyl. triquetrum*. Reid, E. M. Two preglacial Pliocene
Floras from Castle Eden. [Quart. Journ. Geol. Soc.,
LXXVI, p. 111.]
1923 *Hyl. triquetrum*. Baumberger, E., etc. Die dilu- Quaternary
vialen Schieferkohlen der Schweiz. [Beitr. Geol.
Schweiz, geotechn. Ser., Lief. 8, pp. 146, 337.]

Rhytidium (Sull.) Kindb.**Rhytidium rugosum (Ehrh.) Kindb.**

- 1908 **Hylocomium rugosum** (Ehrh.) Bry. eur. Holst, Lateglacial
N. O. Efterskörd från de senglaciala Lagren vid
Toppeladugård [Sver. geol. Undersökning
Arsbok, II, p. 19.]
- 1910 **Hyl. rugosum**. Hesselbo, A. Mosrester fra Dilu- Diluvial
viet ved Skaerumhede. [Danmarks geol. Under-
søgelse, II Raekke, No. 25, p. 108.]
- 1914 **R. rugosum**. Zmuda, A. J. Fossile Flora des Diluvial
Krakauer Diluviums. [Bull. int. Acad. Sci. Cra-
covie d. sc. math. et nat., Sér. B, No. 2 B, p. 249.]

Hylocomium Bry. eur.**Hylocomium brevirostre (Ehrh.) Bry. eur.**

- 1905 **Hylocomium brevirostre**. Neuweiler, E. Die prä- Pleistocene
histor. Pflanzenreste Mitteleuropas [Vier-
teljahr. naturforsch. Ges. Zürich, L, Heft 6, p. 38.]
Note. This is said to have been determined as
Brachythecium rutabulum by Uhlmann.
- 1910 **Hyl. brevirostre**. Dixon, H. N. Some "Neolithic" Postglacial
moss remains from Fort William. [Ann. Scott.
Hist., 1910, p. 105.]
- 1923 **Hyl. brevirostre**. Baumberger, E., etc. Die dilu- Quaternary
vialen Schieferkohlen der Schweiz. [Beitr. Geol.
Schweiz, geotechn. Ser., Lief. 8, pp. 146, 338.]

Hylocomium proliferum (L.) Lindb.

- 1898 **Hylocomium proliferum**. Andersson, Gunnar. Stud. Quaternary
öfver Finlands Kvartärflora. [Bull. de la Com-
mission géol. de Finlande, Tome 2, No. 8, p. 136.]
- 1902 **Hyl. splendens** (Dill.) Bry. eur. Hartz, N. Bidrag Lateglacial
til Danmarks senglaciale Fl. og Fauna. [Dan-
marks geol. Undersøgelse, II Raekke, No. 11, pp.
11, 15, 18.]
- 1903 **Hypnum splendens** Dill. Range, Paul. Das Dilu- Diluvial
vialgebiet von Lübeck und seine Dryastone
[Zeitschr. f. Naturwiss., LXXVI, p. 269.]
- 1905 **Hypnum splendens**. Neuweiler, E. Die prähistor. Pleistocene
Pflanzenreste Mitteleuropas [Vierteljahr. na-
turforsch. Ges. Zürich, L, Heft 6, p. 40.]
- 1909 **Hyl. proliferum**. Hartz, N. Bidrag til Danmarks Diluvial
tertiære Flora. [Danmarks geol. Undersøgelse,
II Raekke, No. 20, p. 260.]
- 1911 **Hyl. splendens**. Dixon, H. N., in Lewis, F. J. Recent; Ice-
The plant remains in the Scottish peat mosses. land peat
Part IV. [Trans. Roy. Soc. Edinb., XLVII, p. 830.]
- 1912 **Hyl. splendens**. Stark, P. Beitr. zur Kenntn. der Glacial
eiszeitlich. Fl. und Fauna Badens. [Ber. natur-
forsch. Ges. Freiburg i. B., XIX, p. 116.]
- 1914 **Hyl. splendens**. Zmuda, A. J. Fossile Flora des Diluvial
Krakauer Diluviums. [Bull. int. Acad. Sci. Cra-
covie d. sc. math. et nat., Sér. B, No. 2 B,
p. 249.]

- 1922 *Hyl. proliferum*. Jessen, Knud, og Rasmussen, R. Recent
Et Profil Gennem en Tørvemose paa Faerørne.
Danmarks geol. Undersøgelse, IV Række, No. 13,
p. 12.]
- 1923 *Hyl. splendens*. Baumberger, E., etc. Die dilu- Quaternary
vialen Schieferkohlen der Schweiz. [Beitr. Geol.
Schweiz, geotechn. Ser., Lief. 8, pp. 146, 286, 338.]
- 1924 *Hyl. splendens*. Burrell, W. H. Pennine Peat. Recent
[Naturalist, 1924, p. 148.]

***Hylocomium pyrenaicum* (Spr.) Lindb.**

- 1912 *Hylocomium pyrenaicum*. Stark, P. Beitr. zur Glacial
Kennntn. der eiszeitlich. Fl. und Fauna Badens.
[Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 90.]

***Hylocomium* undetermined species.**

- 1909 *Hylocomium* sp. Travis, W. G. Plant remains Peat
in peat at Aintree. [Trans. Liverpool Bot.
Soc., I, p. 5.]

***Hypnum* Dill. ex. p.**

***Hypnum Schreberi* Willd.**

- 1898 *Hylocomium parietinum* (L.) Lindb. Andersson, Quaternary
Gunnar. Stud. öfver Finlands Kvartärflora.
[Bull. de la Commission géol. de Finlande, Tome
2, No. 8, p. 136.]
- 1900 *Hypnum Schreberi*. Gepp, A. Fossil plant re- Recent; sub-
mains in peat. [Journ. of Bot., XXXIII, p. 181.] marine peat
- 1902 *Hyl. parietinum*. Hartz, N. Bidrag til Danmarks Late glacial
senglaciale Flora og Fauna. [Danmarks geol. Un-
dersøgelse, II Række, No. 11, p. 11.]
- 1905 *Hyp. Schreberi*. Neuweiler, E. Die prähistor. Pleistocene
Pflanzenreste Mitteleuropas [Vierteljahr. na-
turforsch. Ges. Zürich, I, Heft 6, p. 40.]
- 1908 *Hyl. parietinum*. Holst, N. O. Efterskörd från Late glacial
de senglaciale Lagren vid Toppeladugård
[Sver. geol. Undersökning Arsbok, II, p. 19.]
- 1909 *Hyl. parietinum*. Hartz, N. Bidrag til Danmarks Diluvial
tertiære Flora. [Danmarks geol. Under-
søgelse, II Række, No. 20, p. 260.]
- 1912 *Hylocomium Schreberi* (Willd.) De Not. Stark, P. Glacial
Beitr. zur Kennntn. der eiszeitlich. Fl. und Fauna
Badens. [Ber. naturforsch. Ges. Freiburg i. B.,
XIX, p. 116.]
- 1914 *Hyp. Schreberi*. Zmuda, A. J. Fossile Flora des Diluvial
Krakauer Diluviums. [Bull. int. Acad. Sci. Cra-
covie d. sc. math. et nat., Sér. B, No. 2B,
p. 249.]
- 1922 *Hyl. parietinum*. Jessen, Knud, og Rasmussen, R. Recent
Et Profil Gennem en Tørvemose paa Faerørne.
[Danmarks geol. Undersøgelse, IV Række, No. 13,
p. 12.]
- 1923 *Hyp. Schreberi*. Baumberger, E., etc. Die diluvi- Quaternary
alen Schieferkohlen der Schweiz. [Beitr. Geol.
Schweiz, geotechn. Ser., Lief. 8, pp. 146, 338.]

Ptilium (Sull.) De Not.**Ptilium crista-castrensis (L.) De Not.**

- 1914 **Ptilium crista-castrensis.** Zmuda, A. J. Fossile Diluvial Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. Sc. math. et nat., Sér. B, No. 2B, p. 249.]

Stereodon (Brid.) Mitt.**Stereodon arcuatus Lindb.**

- 1907 **Stereodon** cfr. **arcuatus.** Holst, N. O. Preglacial Dryasförande nära Ystad. [Geol. Fören. Förh., XXIX, p. 232.] Preglacial
- 1914 **Hypnum Lindbergii** Mitt. Weber, C. A. Die Mammutflora von Boron. [Abh. Nat. Ver. Bremen, XXIII, Heft 1, p. 21.] Glacial

Stereodon callichrous Brid.

- 1912 **Hypnum callichroum (Brid.)** C. M. Dixon, H. N., in Warren, S. H. A late Glacial stage in the Lea Valley. [Quart. Journ. Geol. Soc., LXVIII, p. 231.] Lateglacial
- 1912 **H. callichroum.** Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 90.] Glacial

Stereodon cupressiformis (L.) Brid.

- 1900 **Hypnum cupressiforme** L. Gepp, A. Fossil plant-remains in peat. [Journ. of Bot., XXXIII, p. 181.] Recent; sub-marine peat
- 1903 **H. cupressiforme.** Range, Paul. Das Diluvialgebiet von Lübeck und seine Dryastone [Zeitschr. für Naturwiss., LXXVI, p. 254.] Diluvial
- 1905 **H. cupressiforme.** Neuweiler, E. Die prähistor. Pflanzenreste Mitteleuropas [Vierteljahr. naturforsch. Ges. Zürich, L, Heft 6, p. 38.] Pleistocene
- 1909 **Stereodon cupressiformis.** Hartz, N. Bidrag til Danmarks tertiære Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 261.] Diluvial
- 1910 **H. cupressiforme.** Dixon, H. N. Some "Neolithic" moss remains from Fort William. [Ann. Scott. Nat. Hist., 1910, p. 105.] Postglacial
- 1913 **S. cupressiformis.** Beyle, M. Ueber einige Ablag. der Hamburger Gegend. Erster Teil. [Jahrb. der Hamburg. wiss. Anst., XXX, 6, Beih., p. 83.] Quaternary
- 1914 **S. cupressiformis.** Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2B, p. 249.] Diluvial
- 1923 **S. cupressiformis.** Baumberger, E., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, pp. 145, 336.] Quaternary
- 1923 **S. cupressiformis** var. **filiformis (Brid.)** Baumberger, op. cit., p. 336. Quaternary
- 1924 **H. cupressiforme.** Burrell, W. H. Pennine Peat. [Naturalist, 1924, p. 148.] Peat

Stereodon fastigiatus Brid.

- 1912 *Hypnum fastigiatum* (Brid.) Hartm. Dixon, H. N., Late glacial
in Warren, S. H. A late Glacial stage in the Lea
Valley. [Quart. Journ. Geol. Soc., LXVIII, p. 231.]

Stereodon fertilis (Sendtn.) Lindb.

- 1912 *Hypnum fertile* Sendtn. Stark, P. Beitr. zur Glacial
Kenntniss der eiszeitlich. Fl. und Fauna Badens.
[Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 90.]

Stereodon hamulosus (Bry. eur.) Lindb.

- 1914 *Hypnum hamulosum* Bry. eur. Weber, C. A. Die Glacial
Mammutfloren von Borna. [Abh. Nat. Ver. Bremen, XXIII, Heft 1, p. 20.]

Stereodon pallescens (Hedw.) Lindb.

- 1912 *Stereodon pallescens*. Stark, P. Beitr. zur Kenntn. Glacial
der eiszeitlich. Fl. und Fauna Badens. [Ber. natur-
forsch. Ges. Freiburg i. B., XIX, p. 90.]

Stereodon pratensis (Koch) Warnst.

- 1911 *Hypnum pratense* Koch? Dixon, H. N., in Lewis, Recent; Ice-
F. J. The plant remains in the Scottish peat land peat
mosses. Part IV. [Trans. Roy. Soc. Edinb., XLVII,
p. 830.]

Note. A single fragment found, probably be-
longing here.

- 1911 *Hypnum pratense* Koch. Dixon, H. N., op. et loc. Recent; Ice-
cit. land peat

Note. From a different layer. Either this or
S. arcuatus, probably *S. pratensis*.

- 1914 *H. pratense*. Weber, C. A. Die Mammutfloren von Glacial
Borna. [Abh. Nat. Ver. Bremen, XXIII, Heft 1,
p. 21.]

Stereodon recurvans (Schwaegr.) Broth.

- 1900 *Hypnum recurvans* Schwaegr. Penhallow, D. P. Pleistocene
Canadian Pleistocene Flora of the Don Valley.
[Rep. of 70th Meeting, Brit. Assoc., Bradford.
Part II, p. 335.]

- 1920 *Sematophyllum recurvans* (Schwaegr.) E. G. Britt. Pleistocene
Baker, Frank C. The life of the Pleistocene or
glacial period. [Univ. of Illinois Bull., XVII,
pp. 334, 335, 377.]

Stereodon reptilis (Rich.) Mitt.

- 1907 *Hypnum reptile* (Rich.)? Hartmann, F. Die Fossile Diluvial
Flora von Ingramsdorf, p. 14.
- 1912 *H. reptile*. Stark, P. Beitr. zur Kenntn. der eis- Glacial
zeitlich. Fl. und Fauna Badens. [Ber. natur-
forsch. Ges. Freiburg i. B., XIX, p. 90.]

Stereodon revolutus Mitt.

- 1910 *Stereodon revolutus*. Hesselbo, A. Mosrester fra Diluvial Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 108.]

Stereodon Vaucheri (Lesq.) Lindb.

- 1912 *Hypnum Vaucheri* Lesq. Dixon, H. N., in Warren, Lateglacial S. H. A late Glacial stage in the Lea Valley. [Quart. Journ. Geol. Soc., LXVIII, p. 231.]

Isopterygium Mitt.**Isopterygium pulchellum** (Dicks.) Jaeg.

- 1912 *Plagiothecium pulchellum* (Dicks.) Bry. eur. Stark, Glacial P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 90.]

Plagiothecium Bry. eur.**Plagiothecium latebricola** (Wils.) Bry. eur.

- 1912 *Plagiothecium latebricola*. Stark, P. Beitr. zur Glacial Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 90.]

Plagiothecium Roeseanum (Hamp.) Bry. eur.

- 1920 *Plagiothecium denticulatum* (L.) Roeseanum(Hamp.) Pleistocene Baker, Frank C. The life of the Pleistocene or glacial period. [Univ. of Illinois Bull., XVII, pp. 126, 184, 377.]

Plagiothecium Ruthei Limpr.

- 1912 *Plagiothecium Ruthei* var. *rupicola* Limpr. Stark, Glacial P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 90.]

Plagiothecium silvaticum (Huds.) Bry. eur.

- 1914 *Plagiothecium silvaticum*. Zmuda, A. J. Fossile Diluvial Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2B, p. 249.]

Plagiothecium striatellum (Brid.) Lindb.

- 1912 *Plagiothecium Muehlenbeckii* (Schimp.) Bry. eur. Glacial Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 90.]

Plagiothecium undulatum (L.) Bry. eur.

- 1910 *Plagiothecium undulatum*. Dixon, H. N. Some Postglacial "Neolithic" moss remains from Fort William. [Ann. Scott. Nat. Hist., 1910, p. 105.]

Brachytheciaceae.**Homalothecium** Bry. eur.**Homalothecium sericeum** (L.) Bry. eur.

- 1909 *Hypnum sericeum* L. Hartz, N. Bidrag til Danmarks tertiære Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 261.] Diluvial
- 1914 *Homalothecium sericeum*. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2B, p. 249.] Diluvial
- 1915 *Hom. sericeum*. Reid, Clement and E. M. The Pliocene Floras of the Dutch-Prussian Border. [Med. van de Rijksopspor. van Delfstoffen, No. 6, p. 53.] Pliocene
- 1918—20 *Hom. sericeum*. Docturowsky, V. S., and Kudriashev, V. Results of Russian studies on peat moors. [Reports on Peat, 4.] Postglacial
- 1923 *Hom. sericeum*. Baumberger, E., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, p. 334.] Quaternary

Campthothecium Bry. eur.**Campthothecium nitens** (Schreb.) Schimp.

- 1899 *Campthothecium nitens*. Weber, C. in Koert, W., and Weber. Ueber ein neues interglaciales Torflager. [Jahrb. der Kgl. preuss. geol. Landesanstalt für 1899, pp. 190, 191.] Interglacial
- 1900 *C. nitens*. Dixon, H. N. Plant-remains in peat. [Journ. of Bot., XXXIII, p. 216.] Peat
- 1903 *Hypnum trichoides* Neck. Range, Paul. Das Diluvialgebiet von Lübeck und seine Dryastone [Zeitschr. f. Naturwiss., LXXXVI, p. 269.] Diluvial
- 1904 *C. nitens*. Bell, A. M. Implementiferous Sections at Wolvercote (Oxfordshire). [Quart. Journ. Geol. Soc., LX, p. 124.] Late glacial
- 1904 *C. nitens*. Geinitz, E., und Weber, C. A. Ueber ein Moostorflager ... der Rostocker Heide. [Arch. d. Ver. d. Fr. d. Naturgesch. in Mecklenburg, LVIII, p. 13.] Postglacial
- 1907 *C. nitens*. Dixon, H. N., in Lewis, F. J. Summary of Progress for 1907, p. 99. [Mem. Geol. Survey.] Peat
- 1908 *C. nitens*. Weber, C. A. Die Moostorfschichten ... zwischen Sarkau und Oranz. [Engl. Bot. Jahrb., XLII, p. 43.] Pleistocene
- 1908 *Hypnum trichoides*. Holst, N. O. Efterskörd från de senglaciala Lagren vid Toppeladugård..... [Sver. geol. Undersökning Arsbok, II, No. 2, p. 19.] Late glacial

- 1909 *C. nitens*. Schuster, J. Paläobot. Not. aus Bayern. [Ber. bayer. bot. Ges., XII, 1, p. 58.] Schieferkohlen
- 1910 *H. trichoides*. Hesselbo, A. Mosrester fra Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 108.] Diluvial
- 1912 *C. nitens*. Dixon, H. N., in Warren, S. H. A late Glacial stage in the Lea Valley. [Quart. Journ. Geol. Soc., LXVIII, p. 231.] Lateglacial
- 1912 *C. nitens*. Stark, P. Beitr. zur Kenntn. der eiszzeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 116.] Glacial
- 1914 *C. nitens*. Weber, C. A. Die Mammutflora von Borna. [Abh. Nat. Ver. Bremen, XXIII, Heft 2, p. 18.] Glacial
- 1914 *Tomenthypnum nitens* (Schreb.) Loeske. Zmuda, A. J. Fossile Flora des Krakauer Diluviums. [Bull. int. Acad. Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2B, p. 247.] Diluvial
- 1917 *C. nitens*. Rudolph, K. Untersuch. über den Aufbau böhmischer Moore. [Abh. k. k. zool.-bot. Ges. Wien, IX, p. 82.] Pleistocene
- 1918 *C. nitens*. Beyle, M. Ueber einige Ablag. fossiler Pflanzen der Hamburger Gegend. Zweiter Teil. [Jahrb. der Hamburg. wiss. Anst., XXXVI, p. 40.] Glacial
- 1920 *C. nitens*. Baker, Frank C. The life of the Pleistocene or glacial period. [Univ. of Illinois Bull., XVII, pp. 228, 241, 377.] Pleistocene
- 1923 *C. nitens*. Baumberger, E., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, pp. 145, 335.] Quaternary

Camptothecium lutescens (Huds.) Bry. eur.

- 1905 *Camptothecium lutescens*. Neuweiler, E. Die prähistor. Pflanzenreste Mitteleuropas [Vierteljahr.-naturforsch. Ges. Zürich, L, Heft 6, pp. 37, 40.] Pleistocene
- 1909 *Hypnum lutescens* Huds. Hartz, N. Bidrag til Danmarks tertiaere Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 261.] Interglacial
- 1923 *C. lutescens*. Baumberger, E., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, p. 334.] Quaternary

Camptothecium Woldenii Grout.

- 1917 *C. Woldenii* Grout, A. J. A Fossil Camptothecium. [Bryologist, XX, p. 9, t. I.] Kansan Drift
- Note. Grout states that this is nearest to *C. pinnatifidum* and *C. aureum*, but differs clearly from both.

Brachythecium Bry. eur.

Brachythecium albicans (Neck.) Bry. eur.

- 1898 *Hypnum* near *albicans* Neck. Andersson, Gunnar. Quaternary Stud. öfver Finlands Kvartärflora. [Bull. de la Commission géol. de Finlande, Tome 2, No. 8, p. 137.]

- 1910 *H. albicans* Neck. Hesselbo, A. Mosrester fra Diluvial
Diluviet ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 108.]

Brachythecium glareosum (Bruch) Bry. eur.

- 1904 *Brachythecium glareosum*. Bell, A. M. Implementiferous Sections at Wolvercote (Oxfordshire). Late glacial
[Quart. Journ. Geol. Soc., LX, p. 124.]

Brachythecium Mildeanum (Schimp.) Schimp.

- 1912 *Brachythecium Mildeanum*. Dixon, H. N., in Warren, S. H. A late Glacial stage in the Lea Valley. Late glacial
[Quart. Journ. Geol. Soc., LXVIII, p. 231.]

Brachythecium plumosum (Sw.) Bry. eur.

- 1889 *Brachythecium plumosum*. Candler, Chas. Observations on some Deposits at Saint Cross Lacustrine
.... in Suffolk. [Quart. Journ. Geol. Soc., XLV, p. 507.]
- 1910 *B. plumosum*. Dixon, H. N. Some "Neolithic" Postglacial
moss remains from Fort William. [Ann. Scott. Nat. Hist., 1910, p. 105.]
- 1910 *B. plumosum*. Hesselbo, A. Mosrester fra Diluviet Diluvial
ved Skaerumhede. [Danmarks geol. Undersøgelse, II Raekke, No. 25, p. 108.]

Brachythecium reflexum (Stark) Bry. eur.

- 1912 *Brachythecium reflexum*. Stark, P. Beitr. zur Glacial
Kenntn. der eiszeitlich. Fl. und Fauna Badens.
[Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 90.]

Brachythecium rivulare (Bruch) Bry. eur.

- 1923 *Brachythecium* cfr. *rivulare*. Baumberger, E., etc. Quaternary
Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, pp. 145, 335.]

Brachythecium rutabulum (L.) Bry. eur.

- 1888 *Brachythecium rutabulum*. Reid. Clement, and Late glacial
Ridley, H. N. Fossil Arctic Plants from
Hoxne, in Suffolk. Geol. Mag., Decade III, Vol. V, p. 444.]
- 1904 *B. rutabulum*. Bell, A. M. Implementiferous Sections at Wolvercote (Oxfordshire). Late glacial
[Quart. Journ. Geol. Soc., LX, p. 124.]
- 1905 *B. rutabulum*. Neuweiler, E. Die prähistor. Pflanzenreste Mitteleuropas [Vierteljahr. naturforsch. Ges. Zürich, L, Heft 6, p. 40.] Pleistocene
- 1909 *Hypnum rutabulum* L. Hartz, N. Bidrag til Danmarks tertiaere Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 261.] Interglacial
- 1910 *B. rutabulum*. Dixon, H. N. Some "Neolithic" Postglacial
moss remains from Fort William. [Ann. Scott. Nat. Hist., 1910, p. 105.]

Brachythecium salebrosum (Hoffm.) Bry. eur.

- 1909 *Hypnum salebrosum* Hoffm. Hartz, N. Bidrag til Inter-
glacial Danmarks tertiaere Flora. [Danmarks geol.
Undersøgelse, II Raekke, No. 20, p. 261.]

Brachythecium turgidum (Hartm.) Hartm. f.

- 1914 *B. turgidum*. Zmuda, A. J. Fossile Flora des Diluvial
Krakauer Diluviums. [Bull. int. Acad. Sci. Cra-
covie d. sc. math. et nat., Sér. B, No. 2 B,
p. 249.]

Brachythecium velutinum (L.) Bry. eur.

- 1909 *Hypnum velutinum* L. Hartz, N. Bidrag til Dan-
marks tertiaere Flora. [Danmarks geol. Un-
dersøgelse, II Raekke, No. 20, p. 261.] Inter-
glacial
- 1914 *Brachythecium velutinum*. Zmuda, A. J. Fossile Diluvial
Flora des Krakauer Diluviums. [Bull. int. Acad.
Sci. Cracovie d. sc. math. et nat., Sér. B, No. 2 B,
p. 249.]

Brachythecium undetermined species.

- 1920 *Brachythecium* sp. Reid, E. M. Two preglacial Pliocene
Floras of Castle Eden. [Quart. Journ. Geol. Soc.,
LXXVI, p. 111.]
- 1922 *Brachythecium* sp. Jessen, Knud, og Rasmussen, R. Recent
Et Profil Gennem en Tørvemose paa Faerørne.
[Danmarks geol. Undersøgelse, IV Raekke, No. 13,
p. 12.]
- 1923 *Brachythecium* sp. Baumberger, E., etc. Die di- Quaternary
luvialen Schieferkohlen der Schweiz. [Beitr. Geol.
Schweiz, geotechn. Ser., Lief. 8, p. 521.]
- 1925 *Brachythecium* sp. Dixon, H. N. Moss Remains Inter-
glacial in Russian Peat. [Journ. of Bot. LXIII, p. 370.]
- 1925 *Brachythecium* sp. Weyland, H. Beitr. zur Kenntn. Upper
fossiler Moose. 1. [Senckenbergiana, VII, Heft Pliocene
1/2, p. 52, t. III.]

Scleropodium Bry. eur.**Scleropodium purum** (L.) Limpr.

- 1909 *Hypnum purum* L. Hartz, N. Bidrag til Dan- Inter-
marks tertiaere Flora. [Danmarks geol. Un-
dersøgelse, II Raekke, No. 20, p. 261.] glacial
- 1909 *H. purum*. Schuster, J. Paläobot. Not. aus Bay- Schiefer-
ern. [Ber. bayer. bot. Ges., XII, 1, p. 58.] kohlen
- 1911 *H. purum*. Stoller, J. Die Flora der jungglazialen Early
Ablag. Ostpreussens. [Jahrb. d. Kgl. preuss. geol. glacial
Landesanstalt, XXXI, t. II, Heft 1, p. 123.]

Scorpiurium Schimp.**Scorpiurium deflexifolium** (Solms) Schimp.

- 1923 *Eurhynchium circinatum* (Brid.) var. *deflexifolium*
(Solms) Boul. Douin, R. Les mousses fossiles

des tuis du Lautaret. [Rev. Génér. de Bot., XXXV, p. 121.]

Cirriphyllum Grout.

Cirriphyllum cirrosum (Schwaegr.) Grout.

- 1910 *Hypnum cirrosum* Schwaegr. Hesselbo, A. Mos- Diluvial
rester fra Diluviet ved Skaerumhede. [Danmarks
geol. Undersøgelse, II Raekke, No. 25, p. 108.]

Cirriphyllum Vaucheri (Bry. eur. ex p.) Loeske & Fleisch.

- 1925 *Eurhynchium* sp.? *Tommasinii* (Sendtn.) Ruthe. Upper
Weyland, H. Beitr. zur Kenntn. fossiler Moose. I. Pliocene.
[Senckenbergiana, VII, Heft 1/2, p. 52, t. III.]

Note. This is the plant recorded as *Eurhynchium* sp. by Engelhardt & Kinkelin, Oberpliocäne Flora des Frankfurter Klärbeckens, in Abh. Senckenb. naturforsch. Ges., XXIX, p. 188, t. XXII, figs. 9—13. The figures there show an entire leaf, apparently nerveless, very concave, and with recurved margins; and strongly suggest *Plagiothecium piliferum*. Weyland however who has examined the specimens figures and describes the piliform acumen as clearly toothed, and states that the margin is frequently incurved; the nerve is stated by him to be not present in the upper part of the leaf, while the lower part of the leaf does not permit of observation. He considers it may be *C. Tommasinii* (*Vaucheri*) or possibly *C. cirrosum*.

Oxyrrhynchium Warnst.

Oxyrrhynchium praelongum (Bry. eur.) Warnst.

[Note. There is considerable confusion about this and *Eurhynchium Stokesii*. The plant described as *Eurh. praelongum* (L.) in the Bry. eur. is not *Hypnum praelongum* L., which is the plant usually known as *Eurh. Stokesii*. It is therefore not always clear to which of these two plants a record of "*H. praelongum*" or "*Eurh. praelongum*" refers.]

- 1904 *Eurhynchium Swartzii* (Turn.) Hobk. Bell, A. M. Late glacial
Implementiferous Sections at Wolvercote (Oxfordshire). [Quart. Journ. Geol. Soc., LX, p. 124.]
- 1905 *Eurhynchium praelongum* Bry. eur. Neuweiler, E. Pleistocene
Die prähistor. Pflanzenreste Mitteleuropas
[Vierteljahr. naturforsch. Ges. Zürich, L, Heft 6, p. 38.]
- 1912 *E. praelongum*. Stark, P. Beitr. zur Kenntn. der Glacial
eiszeitlich. Fl. und Fauna Badens. [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 116.]
- 1913 *E. praelongum*. Beyle, M. Ueber eine Ablag. fossiler Pflanzen der Hamburger Gegend. [Jahrb. Hamburg. wiss. Anstalt, XXX, 6, Beih., p. 83.] Pleistocene
- 1918—20 *O. praelongum*. Docturowsky, V. S., and Kudziashev, V. Postglacial
Results of Russian studies on peat moors. [Reports on Peat, 4.]

- 1920 *E. Swartzii* (Turn.) Hobk. Reid, E. M. Two pre-glacial Floras from Castle Eden. [Quart. Journ. Geol. Soc., LXXVI, p. 111.] Pliocene
- 1922 *E. praelongum*. Jessen, Knud, og Rasmussen, R. Recent
Et Profil Gennem en Tørvemose paa Faerørne. [Danmarks geol. Undersøgelse, IV Raekke, No. 13, p. 12.]
- 1923 *E. praelongum*. Baumberger, E. etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, p. 335.] Quaternary

***Oxyrrhynchium rusciforme* (Neck.) Warnst.**

- 1910 *Eurhynchium rusciforme* (Neck.) Milde. Dixon, H. Postglacial
N. Some "Neolithic" moss remains from Fort William. [Ann. Scott. Nat. Hist., 1910, p. 105.]

***Oxyrrhynchium speciosum* (Brid.) Warnst.**

- 1904 *Eurhynchium speciosum* (Brid.) Milde. Bell, A. M. Lateglacial
Implementiferous Sections at Wolvercote (Oxfordshire). [Quart. Journ. Geol. Soc., LX, p. 124.]
- 1915 *E. speciosum*. Reid, Clement and E. M. The Pliocene Floras of the Dutch-Prussian Border. [Med. van de Rijksopspor. van Delfstoffen, No. 6, p. 53.] Pliocene

***Oxyrrhynchium Swartzii* (Turn.) Warnst.**

- 1909 *Hypnum Swartzii* Turn. Hartz, N. Bidrag til Danmarks tertiaere Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 261.] Interglacial
- 1919 *Eurhynchium Swartzii* (Turn.) Bry. eur. Gadeceau, E. Les Forêts submergées de Belle-Ile-en-mer. [Bull. Biol. de la France, etc., LIII, p. 295.] Postglacial
- 1923 *E. Swartzii*. Baumberger, E., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, p. 335.] Quaternary

***Eurhynchium* Bry. eur.**

***Eurhynchium Stokesii* (Turn.) Bry. eur.**

- 1909 *Hypnum praelongum* L. Hartz, N. Bidrag til Danmarks tertiaere Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 261.] Interglacial
- 1910 *Eurhynchium praelongum* (L.) Hobk. Dixon, H. Postglacial
N. Some "Neolithic" moss remains from Fort William. [Ann. Scott. Nat. Hist., 1910, p. 105.]
- 1920 *E. praelongum*. Reid, E. M. Two preglacial Floras from Castle Eden. [Quart. Journ. Geol. Soc., LXXVI, p. 111.] Pliocene
- 1922 *E. Stokesii* (*Stokesii*, false). Jessen, Knud, og Rasmussen, R. Et Profil Gennem en Tørvemose paa Faerørne. [Danmarks geol. Undersøgelse, IV Raekke, No. 13, p. 12.] Recent

***Eurhynchium striatulum* (Spr.) Bry. eur.**

- 1912 *Eurhynchium* cfr. *striatulum*. Stark, P. Beitr. zur Kenntn. der eiszeitlich. Fl. und Fauna Badens.

- [Ber. naturforsch. Ges. Freiburg i. B., XIX, p. 116.]
- 1923 *E. striatulum*. Baumberger, E., etc. Die diluvialen Schieferkohlen der Schweiz. [Beitr. Geol. Schweiz, geotechn. Ser., Lief. 8, p. 335.] Quaternary
- 1923 *E. striatulum* var. *integrifolium*. Baumberger, op. et loc. cit. Quaternary

***Eurhynchium striatum* (Schreb.) Schimp.**

- 1905 *Eurhynchium striatum*. Neuweiler, E. Die prä-histor. Pflanzenreste Mitteleuropas [Vierteljahr. naturforsch. Ges. Zürich, I, Heft 6, p. 38.] Pleistocene
- 1909 *Hypnum striatum* Schreb. Hartz, N. Bidrag til Danmarks tertiaere Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 261.] Interglacial
- 1910 *E. striatum*. Dixon, H. N. Some "Neolithic" moss remains from Fort William. [Ann. Scott. Nat. Hist., 1910, p. 105.] Postglacial
- 1911 *H. striatum*. Stoller, J. Beitr. zur Kenntn. der diluv. Flora Norddeutschlands. [Jahrb. Kgl. preuss. geol. Landesanstalt, XXXII, Teil 1, Heft 1, p. 135.] Diluvial

***Eurhynchium strigosum* (Hoffm.) Bry. eur.**

- 1909 *Hypnum strigosum* Hoffm. Hartz, N. Bidrag til Danmarks tertiaere Flora. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 261.] Interglacial

***Eurhynchium* spec. Eng. et Kink.**

cf. *Cirriphyllum Vaucheri* Loeske et Fl.

***Rhynchostegium* Bry. eur.**

***Rhynchostegium Knowltoni* E. G. Britt.**

- 1899 *Rhynchostegium Knowltoni* E. G. Britt. A new Tertiary fossil Moss, in Bull. Torr. Bot. Club, XXVI, p. 79, with text figure (repeated op. cit., XXXIV, (1907), t. 9, fig. 5). Miocene or Upper Eocene

***Hypnodendron* (C. M.) Lindb.**

- 1922 *Hypnodendron arborescens* (Mitt.) Lindb., or *H. Reinwardtii* (Hornsch.) Lindb. Dixon, H. N. Note on a moss in amber. [Journ. of Bot., LX, p. 149, with text-figure.] Lower Miocene Amber, Burma

Note. The fragment of branch might very well belong to either of the above species. *H. arborescens* is known from the Malay Peninsula, but *H. Reinwardtii* has not been recorded from continental Asia.

Excluded and doubtful genera and species.

***Cryptothecium antediluvianum* Hueb.**

Cryptothecium antediluvianum nov. gen. & sp. Tertiary Huebener MS. in Weber, C. O. Die Tertiärflora der niederrhein. Braunkohlenformationen, in Palaeontographica, II, p. 228 (1852).

This is stated by Schimper to be a species of *Sphagnum*.

Hypnites haeringianus Ett.

Hypnites haeringianus nov. gen. & sp. Ettingshausen, C. von. Die Tertiärflora von Haering, in Abh. d. geol. Reichsanstalt, Wien, II, p. 27, t. IV (1852). Tertiary; schiste calcaire bitumineux

Syn. *Hypnum haeringianum* Schimp., Traité de Pal. Végét., I, p. 249. Schimper considers this to belong to the *Hypna adunca*.

Hypnum armissanense Schimp. cf. *Muscites pulvinatus*.**Hypnum Brownii** Kirchner.

- 1898 *Hypnum Brownii* Kirchner, C. G. Walter. Contrib. to the fossil flora of Florissant, Colorado. [Trans. Acad. Sci. St. Louis, VIII, p. 178, t. XII]. Tertiary
 [Trans. Acad. Sci. St. Louis, VIII, p. 178, t. XII].
 [cfr. also Knowlton, F. H. A review of the fossil plants in the U. S. Nat. Mus. in Proc. U. S. Nat. Mus., LI (1916), p. 245. See also Britton & Hollick, Bull. Torr. Bot. Club, XXXIV, p. 139—140, t. IX. The author compares it with *Brachythecium populeum*, but the figures do not suggest that, the leaves being broader and shorter. "Brachythecioid" seems as near as it seems safe to go.]

Hypnum carbonarium Ludw.

- 1859 *Hypnum carbonarium* Ludwig, R. Fossile Pflanzen aus der Rheinisch-Wetterauer-Tertiär-Formation. [Palaeontographica, VIII, p. 62, t. IX and XXIV]. Tertiary
 Lignites of Salzhausen
 The figures rather suggest a *Fontinalis*. Schimper thinks a *Hypnum* (Traité de Pal. Végét., I, p. 248).

Hypnum columbianum Penhallow.

- 1890 *Hypnum columbianum* Penhallow, D. P., in Dawson, Sir Wm., Trans. Roy. Soc. Canada, VIII, Pt. 4, p. 77, fig. 3. Lower Tertiary
 Britton and Hollick, Bull. Torr. Bot. Club, XXXIV, p. 140, t. IX, fig. 4, consider this to be a conifer, near to *Widdringtonia helvetica* Heer, or *Glyptostrobus Ungerii* Heer.

Hypnum Haydenii Lesq.

- 1878 *Hypnum Haydenii* Lesq. in Hayden, F. V. Tertiary Flora of U. S. [Rep. of U. S. A. Geol. Survey, VII, p. 44]. Tertiary
 Cockerell, T. D. A. [A Redwood described as a Moss, Torreya, VII, p. 203 (1907),] shows this to be a conifer, *Sequoia Haydenii* (Lesq.) Cock.

Hypnum Heerii Schimp.

- 1855—59 *Hypnum Schimperii* Heer. Flora tertiaria Helvetiae, I, p. 28, t. III (nec *H. Schimperianum*). Tertiary
 Fossilium Catalogus II. 13.

Lor. 1864; nec *H. Schimperii* (Ung.) Schimp.)

Schimper (Traité de Pal. Végét., I, p. 247) alters the name to *H. Heerii*, in view of the earlier *H. Schimperianum* and *Muscites Schimperii* Ung. He compares it with *Amblystegium serpens*, but the resemblance cannot be very close; the leaves being longer and narrower, with an apparently percurrent nerve.

Hypnum Heppii Heer.

1855—59 *Hypnum Heppii* Heer. Fl. tertiaria Helvetiae, I, p. 28, t. III. Tertiary

Syn. *Hygroamblystegium Heppii* (Heer) Broth. in Engler, Die Natürlich. Pflanzenfam., Musci, II, p. 523 (1925).

Schimper figures this, Traité de Pal. Végét., t. VI, figs. 20, 21 (not 17, 18, 19, as in the text). He considers it to be nearest to *Amblystegium irriguum* var. *fallax*, but the leaves are, as he says, too narrow. It suggests to me a *Drepanocladus*, of the *fluitans* group, but the acumen is perhaps too broad, and the dimensions rather small.

Hypnum Mastodontum Boul.

1892 *Hypnum Mastodontum*. Boul, N., Flore pliocène du Mont-Dore, p. 45, f. 9. Pliocene

Boulay suggests *Amblystegium riparium* as the nearest affinity, but agrees that it cannot be that. The upper cells are shortly linear; no distinct alar cells visible.

1903 *Hypnum* cfr. *Mastodontum* Boul. Marty, P. Flore Miocene Miocène de Joursac. Rev. Haute Auvergne, 1903, p. 18, t. I, figs. 7—10].

This does not appear to have been critically examined. All one can say is that it is a pleurocarpous moss, with lanceolate, single-nerved leaves.

Hypnum plumula Schimp.

1869 *Hypnum plumula* Schimp., Traité de Pal. Végét., I, p. 248. Etage tertiaire, près d'Allauch

According to Schimper this is "une forme exotique", not allied to any European moss. It is not figured.

Hypnum priscum Schimp.

1865 *Hypnum priscum* Schimp. in Heer, O. Die Umwelt der Schweiz, 1. Aufl., p. 497. Quaternary lignites of Dürnten, Switzerland

Schimper says this is very close to *Calliergon sarmmentosum*. Gams, in Vierteljahrsschr. naturforsch. Ges. Zürich, LXIII, p. 28 (1913) states that according to Meylan it is between *Calliergon giganteum* and *Scorpidium scorpioides*.

Hypnum Saportanum Schimp. cfr. *Muscites setosus*.**Hypnum Schimperi** (Ung.) Schimp.

- 1869 *Hypnum Schimperi* (Ung.) Schimp. *Traité de Pal. Vét.*, 1, p. 246. *Muscites Schimperi* Ung. *Genera et Spec. Plant. Fossil.*, p. 42 (1850); and *Iconograph. plant. fossil.*, in *Denkschr. d. k. k. Akad. d. Wissensch.*, Wien, 1852, p. 10, t. IV; and p. 82, t. XXVII, Figs. 1, 2.

Schiste
calcaire
argileux de
Paschlug

Unger compares it with *Campylium stellatum* ("admodum convenit"). Ettingshausen, in *Denkschr. d. k. k. Akad. d. Wissensch.*, Wien, XXXVIII, Abth. 1, figures on t. V, figs. 7—9 a separate capsule, associated with the vegetative fragments. I have examined the specimen on which this is based, in the Geol. Dept. of the British Museum (No. 592). It may be the impression of a moss capsule, but if so it is much more like *Catoscopium* than *Hypnum*!

Schimper considers it of doubtful affinity.

Hypnum Schimperi Heer. cfr. *Hypnum Heerii*.**Hypnum Taramellianum** Farneti.

- 1896 *Hyp. Taramellianum* Farn. *Ricerche di briol. palaeont. al periodo glaciale*. [Atti dell Istit. Bot. della Reale Univ. di Pavia, Ser. II, vol. V, p. 56, t. IV] cf. also Schilbersky, K. *Ein Laubm. aus dem Pleistocän von Kecskemét* [Math. Termstud. Ertesitö, XXX (1912) p. 632] text and figures. The author says it recalls *Scleropodium purum*, *Drepanocladus turgescens*, *Acrocladium cuspidatum*, etc., and does not venture to place it. The figure looks to me more like a *Hygrohypnum* (e. g. *H. molle* or *H. dilatatum*) than any of the above.

Pleistocene

Hypnum Ungerii Schimp.

- 1869 *Hyp. Ungerii* Schimp. *Traité de Pal. Végét.*, I, p. 247. *Muscites hypnoides* Ung. *Iconograph. plant. fossil.*, in *Denkschr. d. k. k. Akad. d. Wissenschaft.*, Wien, 1852, p. 11, t. IV.

Schiste
calcaire
marneux de
Radoboj

Probably, according to Schimper, a submerged or floating form of a riparian moss.

Hypnum viride.

- 1909 *Hypnum viride*. Hartz, N. *Bidrag til Danmarks tertiaere Flora*. [Danmarks geol. Undersøgelse, II Raekke, No. 20, p. 261.]
- This may refer either to *H. viride* Lam. (*Brachythecium populeum*), or to *H. viride* Schleich. (*Amblystegium serpens*).

Hypnum Weberianum Schimp.

- 1856 **Hypnum Weberianum Schimp.**, *Traité de Pal. Végét.*, I, p. 249. Tertiary

Hyp. lycopodioides Weber, C. O. in Wessel & Weber, *Neuer Beitrag zur Tertiärflora der niederrhein. Braunkohlformation*. [*Palaeontographica*, IV, p. 126, t. XXX, f. 12] (nec *H. lycopodioides* Brid.).

Schimper compares it to *Brachythecium salebrosum* or *Antitrichia curtispindula*, but with leaves narrowly linear-lanceolate. He does not suggest any closer affinity. The figure shows a well preserved moss with regularly plumose stems; it suggests to me an aquatic *Drepanocladus*, e. g. a *fluitans* form, rather than either of the above plants. The name was given by Weber in reference to a supposed resemblance to certain Lycopods, and has no connection with *Drepanocladus lycopodioides* (Brid.). The name was altered by Schimper to *H. Weberianum*, rather unfortunately, in view of *H. Weberianum* Goepp., which latter Schimper referred to *Drepanocladus Sendtneri*.

Hypnum Spp.

- 1892 **Hypnum sp.** Boulay, N. *Flore pliocène du Mont Dore*, p. 45. Pliocene
The author compares with *Hygrohypnum filicinum* and *Cratoneuron commutatum*.
- 1900 **Hypnum sp.** Penhallow, D. P. *Canadian Pleistocene Flora of the Don Valley*. [Rep. of Brit. Assoc., 1900, Bradford. Pt. II, p. 336.] Pleistocene
- 1903 **Hypnum sp.** Range, Paul. *Das Diluvialgebiet von Lübeck und seine Dryastone* [Zeitschr. f. Naturwiss., LXXVI, p. 191 bis]. Diluvial
- 1903 **Hypnum sp.** Range, Paul, op. cit., p. 257. Diluvial
- 1905 **Hypnum sp.** Neuweiler, E. *Zur Interglazialflora der schweizerisch. Schieferkohlen*. [Ber. d. schweizerisch. bot. Ges., Heft XV. Beilage. Neunter Ber. d. zürcherisch. bot. Ges., p. 94]. Interglacial
The author comments "entspricht dem *H. sarmentosum* und *trifarium*".
- 1907 **Hypnum sp.** Hartmann, F. *Die fossile Flora von Ingramsdorf*, p. 14. Diluvial
- 1908 **Hypnum sp.** Dixon, H. N., in Lewis, F. J. *The Plant Remains in the Scottish Peat Mosses*. Part III. [Trans. Roy. Soc. Edinb., XLVI, p. 40.] Recent Scottish Peat
- 1920 **Hypnum sp.** Baker, Frank, C. *The life of the Pleistocene or glacial period*. [Univ. of Illinois Bull., XVII, pp. 27, 87, 101, 329.] Pleistocene
- 1923 **Hypnum sp.** Douin, R. *Les mousses* *fossiles des tufs du Lautaret*. *Rev. Gén. Bot.*, XXXV, p. 120.]

Lycopodites Meekii Lesq.

Lycopodites Meekii Lesq. It has been suggested by Solms-Laubach (*Fossil Botany*, p. 186, 1891) that this fossil, figured by Lesquereux

in 2nd Geol. Surv. Penn., Rep. of Progress P. Harrisburg, 1879, t. LXII, f. 1, may be a moss. Seward however shows that this is untenable, and remarks that it resembles closely *Selaginella Oregana*. It has no real claim to be considered a Bryophyte.

Muscites

Muscites Brongn., Hist. des Végétaux Fossiles, p. 93 (1828).

The diagnosis is preceded by a note that the author designated under this genus such fossil mosses as could not be determined as belonging to any living genus.

Muscites apiculatus Goepp. & Ber.

1845 *Muscites apiculatus* Goepp. & Ber. Die im Bernstein befindlichen organ. Reste der Vorwelt, I, Abt. 1, p. 111, t. VI, fig. 32. Amber

Syn. *Barbula subcanescens* Goepp. & Ber. in Goeppert, H. R. Ueber die Bernsteinflora, p. 458.

Schimper, Traité de Pal. Végét., I, p. 243, says of this "plus que problématique". Caspary (Flora d. Bernsteins, in Abh. Kgl. preuss. geol. Landesanstalt, N. F., Heft 4,) says of this that it "ist auch kein Moos".

Schimper adds that it can in no case belong to *Barbula*, and says that a single leaf suggests a floral leaf from *Polytrichum*. This appears to me by no means impossible; cfr. Goeppert & Berendt's fig. 32 with the ♂ bract e. g. of *Pol. gracile* (Bry. eur., t. 421, fig. 7), or of *P. juniperinum* (ibid., t. 423, fig. 10).

Muscites Bertrandii Lignier.

1914 *Muscites Bertrandii* Lignier, V. Sur une mousse houillère à structure conservée. [Bull. Soc. Linn. Normandie, 6 Sér., VII, p. 128.] Palaeozoic; Stephanien; silice de Grand Croix

This is described as showing a partial transverse section of a stem, exhibiting parenchymatous tissue, the unistratose outermost layer with thickened walls, and rhizoids with oblique partitions. The evidence for its belonging to the Bryophytes seems rather slight, though I am not aware of any other suggestion having been made for it; and the figure certainly indicates a moss stem.

Muscites confertus Goepp. et Ber.

cfr. *Weisia conferta* Schimp.

Muscites dubius Goepp. & Ber.

1845 *Muscites dubius* Goepp. & Ber. Die im Bernstein befindlichen organ. Reste der Vorwelt, I, Abt. 1, p. 112, t. VI, figs. 25, 26; and Goeppert, Ueber die Bernsteinflora, p. 459. Amber

Schimper in the Traité de Pal. Végét. makes no reference to this; from the figure I should

feel doubtful if it is a moss; possibly plumose feathers of a bird, or pappus hairs of a higher plant.

Muscites elatinus Sap.

cf. *Thuidium elatinum* (Sap.) Schimp.

Muscites elegans Goepp.

- 1853 **Muscites elegans** Goepp. Ueber die Bernsteinflora. [Monatsber. d. Berliner Akad., 1853, p. 459.] Amber

Of doubtful affinity. Goeppert says of it "Ein höchst zierliches, 3 Linien langes Pflänzchen, ähnlich manchen *Mnium* Arten hinsichtlich der Insertion der fast gestielten, etwas $\frac{1}{2}$ Lin. langen Blättchen."

Schimper (Traité de Pal. Végét., I, p. 244) suggests that it may be a small Hookeriaceous moss.

Muscites fontinaloides Ung.

- 1852 **Muscites fontinaloides** Unger. Iconograph. plant. fossil. [Denkschr. d. k. k. Akad. d. Wissensch., Wien, 1852, p. 82, t. XXVII, figs. 3, 4.] In schisto margaceo ad Parschlug Stiriae

Schimper makes no reference to this. From the figure it must, I think, if a moss at all, which seems probable, almost certainly be a *Fontinalis*.

Muscites Hauchecornei Casp. & Klebs.

- 1906 **Muscites Hauchecornei** Caspary & Klebs, in Caspary, Flora d. Bernsteins. [Abh. Kgl. preuss. geol. Landesanstalt, N. F., Heft 4, p. 56, t. VIII, fig. 48.] Amber

Syn. *Muscites serratus* Goepp. in sched., non *M. serratus* Goepp. & Ber.

Caspary can suggest no relationship. The figures strongly suggest a *Mnium* or *Mnioid* moss (cfr. *M. antiquorum* Card. & Dix.); the cells are described as isodiametric and irregular, —.0085 —.0414 mm (? .014.)

Muscites hirsutissimus Goepp. & Ber.

- 1845 **Muscites hirsutissimus** Goepp. & Ber. Die im Bernstein befindlichen organ. Reste der Vorwelt, I, Abt. 1, p. 112, t. VI, figs. 23, 24; and Goepp. Ueber die Bernsteinflora, p. 459. Amber

Schimper (Traité de Pal. Végét., I, p. 245) says of this that it is evidently a phanerogamous plant.

Muscites hypnoides Ung.

cf. *Hypnum Unger* Schimp.

Muscites intricatus Sap.

- 1863 **Muscites intricatus** Saporta. Etudes sur la végétation du Sud-Est de la France. [Ann. des Sc. nat. Par., 4^e sér., XIX, p. 30].

Saporta compares this with *Philonotis fontana*. The position must be considered extremely doubtful.

Muscites joursacensis Marty.

- 1903 **Muscites joursacensis** Marty, P. Flore miocène de Joursac. [Rev. Haute Auvergne, 1903, p. 18, t. I, figs. 4—6.] Miocene

Marty says that it suggests a *Fissidens* or *Conomitrium*; but this from the branching is quite out of the question. The thickness of the stem as shown in the enlarged fig. 5 appears to me to preclude a moss altogether, and I am inclined to think it more likely a phanerogam.

Muscites oeningensis Braun

cf. *Thuidium oeningense* (Braun) Schimp.

Muscites pereger Sap.

- 1862 **Muscites pereger** Saporta, Etudes sur la végétation du Sud-Est de la France. [Ann. des Sc. nat. Par., 4^e sér., XVII, p. 207.] Gypse d'Aix

Schimper makes no reference to this. Saporta compares it at once with *Polytrichum commune* and *Dicranum scoparium*!

Muscites polytrichaceus Ren. & Zeill.

- 1885 **Muscites polytrichaceus** Renault, B. & Zeiller, R. Sur des Mousses de l'époque houillère. [Compt. Rend. Acad. Sci. Paris, C, p. 660]. Also in Ren. & Zeill., Flore Fossile de Commentry, in Bull. Soc. Industr. Min., 1888, p. 34, t. XLI. Described and figured by Jongmans, in Med. van de Rijksopspor. van Delfstoffen, No. 3, p. 11. Palaeozoic, Stéphanien de Com-mentry

Supposed to be an Acrocarpous moss. Numerous stems with clearly defined, uninerved leaves, "alternate", e descr., and so figured. The texture and size seemed to leave no doubt of its being a moss. It is compared with *Rhizogonium* and *Polytrichum*; it has certainly nothing to do with the latter, and very doubtfully with the former.

It is figured also by Seward, Fossil Plants, vol. I, p. 239, fig. 51.

Muscites pulvinatus Sap.

- 1865 **Muscites pulvinatus** Saporta, Etudes sur la végétation du Sud-Est de la France. [Ann. des Sc. nat. Par., 5^e sér., IV, p. 32, t. I, f. 3.] Tertiary lignites of Armissan

Hypnum armissanense Schimp., Traité de Pal. Végét., I, 248.

Schimper compares it with *Eurhynchium Stokesii*.

Muscites redivivus Sap.

- 1862 *Muscites redivivus* Saporta, op. cit., 4e sér., XVII, p. 207, t. II, f. 2.

A Hypnaceous moss of doubtful affinity. According to Schimper the figure recalls somewhat *Eurhynchium Teesdalei*, but he considers it impossible to determine the genus.

Schistes
marneux
dans les
gypses
d'Aix

Muscites Schimperi Ung.

cf. *Hypnum Schimperi* (Ung.) Schimp.

Muscites serratus Goepp. & Ber.

- 1845 *Muscites serratus* Goeppert & Berendt, Die im Bernstein befindlichen organ. Reste der Vorwelt, I, Abt. 1, p. 111, t. VI, figs. 27, 28. Also Goeppert, Ueber die Bernsteinflora, p. 459.

Amber

Schimper, Traité de Pal. Végét., I, 250, suggests an affinity with the exotic genus, *Trichosteleum*, e. g. *T. Boschii* (Doz. & Molk.) This affinity is based solely on the ground of the appearance of papillae on the cells of the enlarged figure 28, — "les feuilles à bord denté auraient le dos couvert d'aspérités spiniformes". He adds that he thinks the figure inexact, the asperities being probably papillae, and being associated with rhomboidal cells, lax, and without a median nerve, they are distinct from all European species with papillose cells.

A careful examination of this figure, however, reveals no such asperities. What Schimper no doubt took for these are, I have no doubt, simply the marginal denticulations drawn so as to appear dorsal in one of the leaves. Moreover the plant from its size could not possibly have had leaves large enough for *Trichosteleum* or the allied genera; fig. 27, of a branch apex, containing about 20 leaves, is less than 1.5 mm. in length! Schimper's own suggestion of a *Fabronia* is without doubt the correct one; the size, the areolation, and the long and fine denticulations of the leaf, agree exactly with species of this genus, e. g. *F. octoblepharis* Schleich.; and fig. 28 might well have been enlarged slightly from the plate in Bry. eur., Tab. 451, of this species.

Muscites setosus Sap.

- 1895 *Muscites setosus* Saporta, Etudes sur la végétation du Sud-Est de la France. [Ann. des sci. nat. Paris, 5e Série, IV, p. 30, t. I, f. 1].

Tertiary
lignites of
Armissan

Hypnum Saportanum Schimp., Traité de Pal. Végét., I, p. 247.

Muscites squamatus Brongn.

1828—1844 *Muscites* ?*squamatus* Brongn. Ad. Hist. des végétaux fossiles, p. 95, t. X.

Syn. *Lycopodites squamatus* Brongn. in Cuvier & Brongn. Descr. géol. des env. de Paris, p. 359, t. XI, fig. 3 (1822). And Brongn., Sur la Classification des Végétaux Fossiles en Général; Chap. 11; in Mém. du Mus. d'Histoire nat., VIII, p. 304; t. VI, fig. 1.

This is in all probability a *Lycopod* rather than a moss.

Muscites Sternbergianus Dunker is not a moss, but a *Sphenolepidium*.

Muscites tortifolius Casp. & Klebs.

1906 *Muscites tortifolius* Caspary & Klebs, in Caspary, Flora d. Bernsteins. [Abh. Kgl. preuss. geol. Landesanstalt, N. F., Heft 4, p. 57; t. VIII, fig. 49.]

Caspary can suggest no relationship. It is clearly a pleurocarpous moss. The leaves are figured as strongly toothed, the acumen strongly half twisted; approximately two-thirds of a millimetre in length, and deeply plicate — an unusual feature in leaves of such small size.

Muscites Tournalii Brongn.

cf. *Fontinalis Tournalii* (Brongn.) Schimp.

Najadita Buckman

1850 *Najadita* gen. nov. Buckman, J. On some Fossil plants of the Lower Lias, in Quart. Journ. Geol. Soc., VI, p. 415.

Gardner, on Mesozoic Angiosperms, Geol. Mag. III, 1886, p. 203, refers the three species here described to Bryophytes; but Miss Sillas (Quart. Journ. Geol. Soc., LVII, p. 307) places them with the Lycopods, and this seems to be generally accepted. Cfr. Zeiller, in Progressus Rei Botanicae, II, p. 179 (1908).

Schlotheimia tenuifolia Sternb.

Jongmans in Med. van de Rijksopspor. van Delfstoffen, No. 3, p. 214, refers to this. It is a genus of *Calamites* alliance, and has nothing to do with the moss genus *Schlotheimia* Brid.

Sporogonites Halle**Sporogonites** Halle.

Sporogonites Halle, gen. nov. A fossil Sporogonium from the Lower Devonian of Røragen in Norway; Bot. Not. 1916, p. 79; with text figure.

Sporogonites exuberans Halle.

- 1916 *Sporogonites exuberans* Halle, T. G. Lower Devonian plants from Røragen in Norway. [Kgl. Svensk. Vet.-Akad. Handl., LVII, p. 27; t. III, figs. 11—32]. Cfr. also Fleischer, Max, in Hedwig., LXI, p. 400. Lower Devonian

This has been referred with some confidence to *Andreaea*, but it certainly belongs to no existing genus of mosses. The affinity with *Andreaea* is suggested from the longitudinal dehiscence of the capsule as suggested by vertical clefts in the wall of the sporogonium, but the resemblance ends there. It is in all probability — while possibly indicating the ancestry of the Bryophyta — not a true Bryophyte, but rather related — perhaps closely — to the genera *Rhynia* and *Hornea* recently described by Kidston & Lang (cf. Trans. Roy. Soc. Edinb. LI, p. 761, LII, pp. 603, 643, 831). The vegetative plant of *Sporogonites* is unknown, the large sporogonium, 6—9 × 3—4 mm., on a stalk at least 50 mm. high, resembles that of *Hornea* (rather than *Rhynia*) in the presence of a large columella, rendering the spore-cavity dome-shaped; the spores measure about 20—25 μ , those of the two genera in question being about 40 μ & 50 μ respectively; while *Sporogonites* differs apparently from both in the presence of longitudinal slits; though the capsule of *Hornea* appears to exhibit normally certain irregularities of structure on the capsule wall. It seems in the present state of our knowledge impossible to determine the position of *Sporogonites* more definitely than this.

Index.

Heavy types indicate those places where the synonymy is given.

- Acroceratium cuspidatum* (L.) Mitt. 79.
A. sarmentosum (Wahl.) Mitt. 77.
Acrocladium Mitt. 79—80.
A. cuspidatum (L.) Lindb. 68, 79.
A. squarrosus (L.) Lindb. 80.
A. species 80.
Amblyodon P. Beauv. 41.
A. dealbatus (Dicks.) Beauv. 41.
Amblystegiella Loeske 60.
A. confervoides (Brid.) Loeske 60.
Amblystegium Bry. eur. 59-60.
A. aduncum (Hedw.) Sanio 63.
A. aduncum var. *Kneiffii* 63.
A. capillifolium (Warnst.) 64.
A. chrysophyllum (Brid.) De Not. 81.
A. confervoides (Brid.) 60.
A. cordifolium (Hedw.) De Not. 75.
A. Cossoni (Schreb.) Lindb. 70.
A. curvicaule Jur. 60.
A. dilatatum Wils. 80.
A. exannulatum (Guemb.) De Not. 65.
A. fallax var. *spinifolium* Schimp. 60.
A. filicinum (L.) De Not. 61.
A. fluitans (L.) De Not. 66, 67.
A. giganteum (Schimp.) De Not. 75, 76.
A. intermedium Lindb. 68.
A. Kneiffii Bry. eur. 64.
A. Kochii Bry. eur. 59.
A. latifolium (Lindb. et Arn.) Lindb. 69.
A. molle (Dicks.) Lindb. 80.
A. polygamum Bry. eur. 82.
A. protensum Lindb. 82.
A. radicale Bry. eur. 60.
A. riparium Bry. eur. 59.
A. Rotae De Not. 66.
A. scorpioides (L.) Lindb. 71.
A. Sendtneri (Schimp.) De Not. 72.
A. serpens Bry. eur. 59.
A. stellatum (Schreb.) Lindb. 82.
A. stramineum (Dicks.) De Not. 78.
A. turgescens (Jens.) Lindb. 73.
A. varium (Hedw.) Lindb. 60.
A. species 60.
Amphidium Nees 30.
A. lapponicum (Hedw.) Schimp. 30.
Andreaea Ehrh. 17, 106.
Andreaeaceae 17.
A. Huntii Limpr. 17.
A. petrophila Ehrh. 17.
A. Rothii Web. et Mohr. 17.
A. species 17.
Anoetangium Hedw. 30.
A. compactum Schwaegr. 30.
Anomobryum Schimp. 33.
A. concinnum (Spruce) Lindb. 33.
Anomodon Hook. et Tayl. 55.
A. curtispindula (Neuweiller) 51.
A. longifolius (Schleich.) Bruch 55.
A. viticulosus (L.) Hook. et Tayl. 55.
A. species Eng. et Kink. 55.
Antitrichia Brid. 51.
A. curtispindula (Hedw.) Brid. 51.
Astrophyllum curvatulum Lindb. 37.
A. cuspidatum (L.) Lindb. 36.
A. hymenophylloides (Hueben.) Lindb. 38.
A. marginatum (Dicks.) Lindb. 38.
A. medium (Bry. eur.) Lindb. 38.

- A. silvaticum* Lindb. 37.
A. subglobosum (Bry. eur.) Lindb. 39.
A. undulatum (L.) Lindb. 39.
Atrichum subundulatum Schimp. 45.
 Aulacomniaceae 40-41.
Aulacomnium Schwaegr. 40-41.
A. palustre (L.) Schwaegr. 40-41.
A. palustre var. *imbricatum* Bry. eur. 40.
A. turgidum Schwaegr. 41.
Autophyllites furcatus Grand'Eury 36.

Barbula Hedw. 26.
B. fallax Hedw. 26.
B. icmadophila Schimp. 26.
B. paludosa Schleich. 26.
B. rubella Lindb. 26.
B. subcanescens Goepp. et Ber. 26, 101.
 Bartramiaceae 43-44.
Blindia Bry. eur. 19.
B. acuta (Huds.) Bry. eur. 19.
B. acuta var. *trichodes* Braithw. 19.
 Brachytheciaceae 90-96.
Brachythecium Bry. eur. 91-93.
B. albicans (Neck.) Bry. eur. 91.
B. glareosum (Bruch) Bry. eur. 92.
B. Mildeanum (Schimp.) Schimp. 92.
B. plumosum (Sw.) Bry. eur. 92.
B. reflexum (Stark) Bry. eur. 92.
B. rivulare (Bruch) Bry. eur. 92.
B. rutabulum (L.) Bry. eur. 92.
B. salebrosus (Hoffm.) Bry. eur. 93.
B. turgidum (Hartm.) Hartm. f. 93.
B. velutinum (L.) Bry. eur. 93.
B. species 93.
 Bryaceae 31-36.
Bryum Dill. 33-36.
Bryum capillare L. 33.
B. cirratum Hoppe et Hornsch. 33.
B. crispulum Hampe 34.
B. cyclophyllum (Schwaegr.) Bry. eur. 34.
B. Duvalii Voit. 34.
B. elegans Nees 34.
B. erythrocarpum Schwaegr. 34.
B. intermedium Brid. 34.

B. lacustre Brid. 34.
B. microstegium Bry. eur. 34.
B. neodamense Itzigs. 34.
B. pallens Swartz 35.
B. pseudotriquetrum Schwaegr. 35, 36.
B. Schleicheri Schwaegr. 35.
B. Schleicheri var. *latifolium* Schimp. 35.
B. ventricosum Dicks. 35.
B. species 36.
Bryon crispatum Grand'Eury 36.

Calliergon (Sull.) Kindb. 75-79.
C. cordifolium (Hedw.) Kindb. 75.
C. diluvianum (Schimp.) Dixon 75.
C. giganteum (Schimp.) Kindb. 75.
C. Richardsoni (Mitt.) Kindb. 77.
C. Richardsoni Zmuda (not Kindb.) 76, 77.
C. sarmentosum (Wahl.) Kindb. 77-78.
C. stramineum (Dicks.) Kindb. 78.
C. trifarium (Web. et Mohr) Kindb. 72, 80.
C. tundrae (Arn.) 73.
C. turgescens (Jens.) Kindb. 73.
C. species 79.
Campthothecium Bry. eur. 90-91.
C. lutescens (Huds.) Bry. eur. 91.
C. nitens (Schreb.) Schimp. 90-91.
C. Woldenii Grout 91.
Campylium (Sull.) Bryhn 81-83.
C. chrysophyllum (Brid.) Bryhn 81.
C. helodes (Spr.) Broth. 81.
C. insubricum (Farneti) Dixon 81.
C. polygamum (Bry. eur.) Bryhn 82.
C. protensum (Brid.) Broth. 82.
C. Sommerfeltii (Myr.) Bryhn 82.
C. stellatum (Schreb.) Lang. et Jens. 82-83.
C. species 83.
Campylopus flexuosus (L.) Brid. 23.
 Catharinaeae Ehrh. 45.
C. subundulata (Goepp. et Menge) 45.

- C. undulata* (L.) Web. et Mohr. 45.
 Catoscopiaceae 43.
Catoscopium Brid. 43.
C. nigrifum (Hedw.) Brid. 43.
Ceratodon Brid. 19.
C. purpureus (L.) Brid. 19.
C. purpureus var. *paludosus* Warnst. 19.
Cinclidium Sw. 39, 40.
C. arcticum Schimp. 39, 40.
C. latifolium Lindb. 40.
C. stygium Sw. 40.
C. species 40.
Cirriphyllum Grout 94.
C. cirrosum (Schwaegr.) Grout 94.
C. Vaucheri (Bry. eur. ex p.) Loeske et Fleisch. 94.
 Climaciaceae 50.
Climacium Web. et Mohr 50.
C. dendroides (Dill.) Web. et Mohr 50.
Conostomum Sw. 43.
C. boreale Sw. 43.
C. tetragonum (Dicks.) Lindb. 43.
Coscinodon Spreng. 28.
C. humilis Milde 28.
Cratoneuron (Sulliv.) Roth 61-62.
C. commutatum (Hedw.) Roth 61-62.
C. decipiens (De Not.) Broth. 62.
C. falcatum (Brid.) Roth 62.
C. irrigatum (Zett.) Roth 62.
C. species 62.
Cryptothecium Hueb. 96.
C. antediluvianum Hueb. 96.
Otenidium (Schimp.) Mitt. 83.
C. molluscum (Hedw.) Mitt. 83.
Desmatodon Brid. 27.
D. latifolius (Hedw.) Bry. eur. 27.
D. latifolius var. *muticus* Brid. 27.
Dichelyma Myr. 50.
D. capillaceum 18, 50.
D. species 49, 50.
Dichodontium Schimp. 20.
D. pellucidum (L.) Schimp. 20.
D. subpellucidum (Goepp. et Menge) 20.
 Dicranaceae 17-23.
Dicranella Schimp. 19-20.
D. Bergeri (Stark) 20.
D. cerviculata (Hedw.) Schimp. 19.
D. Mühlenbeckii (Stark) 21.
D. squarrosa (L.) Schimp. 19.
D. Sauteri (Stark) 21.
D. species 19, 20.
Dicranites Klebs 22, 23.
D. Casparyi Klebs 23, 24.
D. obtusifolius Casp. et Klebs 23.
D. subflagellare Casp. 22, 23.
Dicranodontium Bry. eur. 23.
D. longirostre (Starke, Bry. eur. 23.
Dicranoweisia Lindb. 20.
D. crispula (Hedw.) Lindb. 20.
Dicranum Hedw. 20-22.
D. Bergeri Bland. 20.
D. Bonjeani De Not. 21.
D. congestum Brid. 21.
D. fuscensens Turn. 21.
D. Mühlenbeckii Bry. eur. 21.
D. parietinum Hartz 21.
D. Sauteri Bry. eur. 21.
D. scoparium (L.) Hedw. 21, 22.
D. scoparium var. *alpestre* Milde 22.
D. Scottianum Turn. 22, 23.
D. simplex Goepp. et Menge 19.
D. strictum Schleich. 22.
D. subflagellare Goepp. et Menge 22.
D. subpellucidum Goepp. et Menge 20, 22.
D. subscoparium Goepp. et Menge 22.
D. species 22.
Didymodon Hedw. 26.
D. alpigena Vent. 26.
D. rigidulus Hedw. 26.
D. rubellus (Hoffm.) Bry. eur. 26.
D. tophaceus (Brid.) Jur. 26.
Distichium Bry. Eur. 18.
D. capillaceum (Sw.) Bry. eur. 18.
Ditrichum Timm 17.
D. flexicaule (Schleich.) Hampe 17.
D. flexicaule var. *densum* 18.
D. tortile (Schrad.) Lindb. 18, 56.
Drepanocladus Roth 62-75.
D. aduncus (Hedw.) Moenk. 62-63.
D. aduncus (Hedw.) Gr. Kneiffii 63-64.
D. aduncus (Hedw.) Gr. pseudofluitans 64.
D. badius (Hartm.) Roth 64.
D. capillifolius Warnst. 64.

- D. exannulatus* (Guemb.) Warnst. 65-66.
D. fluitans (L.) Warnst. 66-68, 100.
D. fluitans (L.) Gr. Rotae (De Not.) 66.
D. fluitans (L.) Warnst. var. *pseudostamineus* (C. M.) 68.
D. Hollosianus (Schilb.) Györrfy 68.
D. intermedius (Lindb.) Warnst. 68-69.
D. latifolius (Lindb. et Arn.) Broth. 69.
D. lycopodioides (Schwaegr.) Warnst. 69.
D. pseudofluitans (Sanio) 64.
D. pseudostamineum (C. M.) Roth 68.
D. revolvens (Sw.) Warnst. 69-70.
D. scorpioides (L.) Warnst. 70-71.
D. Sendtneri (Schimp.) Warnst. 72.
D. Sendtneri var. *Wilsoni* (Schimp.) 74.
D. subaduncus Warnst. 63.
D. trifarius (Web. et Mohr) Broth. 72-73.
D. Tundrae (Arn.) 73.
D. turgescens (Jens.) Broth. 73.
D. vernicosus (Lindb.) Warnst. 74.
D. Wilsoni (Schimp.) Roth 74.
D. species 75.
Dryptodon patens Brid. 30.

Elodium see *Helodium*.
Encalypta Schreb. 27-28.
E. alpina Smith 27.
E. rhabdocarpa Schwaegr. 27, 28.
Entodontaceae 54.
Eucladium Bry. eur. 25.
E. verticillatum (L.) Bry. eur. 23, 25.
Eurhynchium Bry. eur. 95-96.
E. circinatum Brid. var. *deflexifolium* (Solms) Boul. 93.
E. myosuroides (Dill.) Schimp. 53.
E. myurum (Poll.) Dixon 54.
E. praelongum Bry. eur. 94, 95.
E. rusciforme (Neck.) Milde 95.
E. speciosum (Brid.) Milde 56, 95.
E. Stokesii (Turn.) Bry. eur. 94, 95.

E. striatulum (Spr.) Bry. eur. 95.
E. striatulum var. *integrifolium* 96.
E. striatum (Schreb.) Schimp. 96.
E. strigosum (Hoffm.) Bry. eur. 96.
E. Swartzii (Turn.) Hobk. 94, 95.
E. Tommasinii (Sendtn.) Ruthe 94.
E. species Eng. et Kink. 94.

Fabronia Raddi 54.
F. octoblepharis Schleich. 104.
Fabroniaceae 54.
Fissidens Hedw. 23-24.
F. adiantoides (L.) Hedw. 23.
F. cristatus Wils. 23.
F. decipiens De Not. 23.
F. julianus Sav. 23.
F. osmundoides (Sw.) Hedw. 24.
F. taxifolius (L.) Hedw. 24.
Fissidentaceae 23-24.
Fontinalaceae 49-50.
Fontinalis (Dill.) L. 49-50.
F. antipyretica L. 49.
F. hypnoides Hartm. 49.
F. pristina Lesq. 49.
F. Sismondana Schimp. 49.
F. Tournalii (Brongn.) Schimp. 49, 105.
F. species 50.

Glyptomitrium Brid. 28.
G. Cockerelleae Brid. et Hollick 28.
Glyptostrobus Ungerii Heer 97.
Grimmia Ehrh. 28-29.
G. alpicola Sw. 28.
G. anodon Bry. eur. 28.
G. apocarpa (L.) Hedw. 28.
G. elatior Bruch 28.
G. elongata Kaulf. 28, 29.
G. ericoides Lindb. 29, 30.
G. funalis (Schwaegr.) Schimp. 29.
G. hypnoides Lindb. 29, 30.
G. incurva Schwaegr. 29.
G. Mühlenbeckii Schimp. 29.
G. robusta 29.
G. subelongata Goepp. et Menge 29.
G. torquata Hornsch. 29.
G. trichophylla Grev. 29.
G. species 29.
Grimmiaceae 28-29.
Gymnostomum Hedw. 24.
G. calcareum Bry. germ. 24.
G. ferrugineum Ludw. 14, 24.

- Hedwigiaceae 48.
 Hedwigia Ehrh. 48.
 H. albicans (Web.) Lindb. 48.
 Helodium (Sull.) Warnst. 58-59.
 H. Blandovii (Web. et Mohr) 59.
 H. lanatum (Stroem) Broth. 58.
 Heterocladium Bry. eur. 54.
 H. squarrosulum (Voit) Lindb. 54.
 H. species 55.
 Homalia (Brid.) Bry. eur. 52.
 H. trichomanoides (Schreb.) Bry. eur. 52.
 Homalothecium Bry. eur. 90.
 H. sericeum (L.) Bry. eur. 56, 90.
 Homomallium (Schimp) Loeske 60.
 H. incurvatum (Schr.) Loeske 60.
 Hornea Kidst. et Lang 106.
 Hygroamblystegium Loeske 60-61.
 H. curvicaule (Jur.) Loeske 60.
 H. fallax (Brid.) Loeske 60.
 H. filicinum (L.) Broth. 61.
 H. Heppi (Heer) Broth. 98.
 Hygrohypnum Lindb. 80-81.
 H. alpestre (Sw.) Loeske 80.
 H. dilatatum (Wils.) Loeske 80.
 H. lignitorum (Schimp.) Dixon 80.
 H. molle (Dicks.) Loeske 80.
 H. ochraceum (Turn.) Loeske 80-81.
 H. palustre (Huds.) Loeske 81.
 H. Smithii (SW.) Broth. 81.
 Hylocomium Bry. eur. 85-86.
 H. brevirostre (Ehrh.) Bry. eur. 85.
 H. loreum (Dill.) Bry. eur. 84.
 H. parietinum (L.) Lindb. 21, 86.
 H. proliferum (L.) Lindb. 85.
 H. pyrenaicum (Spr.) Lindb. 86.
 H. rugosum (Ehrh.) Bry. eur. 85.
 H. Schreberi (Willd.) De Not. 86.
 H. splendens (Dill.) Bry. eur. 85.
 H. squarrosulum (L.) Bry. eur. 84.
 H. triquetrum (L.) Bry. eur. 84.
 H. species 86.
 Hymenostomum R. Br. 24.
 H. microstomum (Hedw.) R. Br. 24.
 H. trichostomum Goepp. 24.
 Hyocmium Bry. eur. 83.
 H. flagellare (Dicks.) Bry. eur. 83.
 Hypnaceae 59-90.
 Hypnites Ett. 97.
 H. Haeringianus Ett. 97.
 Hypnodendron (C. M.) Lindb. 96.
 H. arborescens (Mitt.) Lindb. 96.
 H. Reinwardtii (Hornsch.) Lindb. 96.
 Hypnum auct. 62.
 Hypnum Dill. ex p. 86.
 H. aduncum Hedw. 62, 63.
 H. aduncum var. groenlandicum Heer 63.
 H. aduncum var. Kneiffii groenlandicum 63.
 H. aduncum var. paternum Sanio 64.
 H. aduncum var. pseudofluitans Sanio 64.
 H. aduncum var. sparsifolium (Warnst.) 63.
 H. albicans Meck. 91, 92.
 H. alpestre Sw. 80.
 H. arcticum Sommerf. 81.
 H. armissanense Schimp. 97, 103.
 H. Browni Kirchner 97.
 H. callichroum (Brid.) C. M. 87.
 H. capillifolium Warnst. 64.
 H. carbonarium Ludw. 97.
 H. chrysophyllum Brid. 81.
 H. cirrosum Schwaegr. 94.
 H. columbianum Penh. 97.
 H. commutatum Hedw. 61, 62.
 H. cupressiforme L. 87.
 H. cuspidatum L. 79.
 H. dilatatum Wils. 80.
 H. diluvianum Schimp. 75.
 H. elodes Spr. 81.
 H. exannulatum Guemb. 65, 66.
 H. exannulatum var. brachydietyon Ren. 65.
 H. exannulatum var. orthophyllum Milde 65.
 H. exannulatum Gr. Rotae 66.
 H. falcatum Brid. 62.
 H. fastigiatum (Brid.) Hartm. 88.
 H. fertile Sendtn. 88.
 H. filicinum L. 61, 62.
 H. fluitans L. 66, 67, 68.
 H. fluitans var. brachydietyon Ren. 65.
 H. fluitans exannulatum 65.
 H. fluitans exannulatum var. pinnatum Boul. f. 65.
 H. fluitans var. falcatum Schimp. 67.

- H. fluitans* var. *falcitofium* Ren. 66.
H. fluitans f. *fossilis* Geheeb 67.
H. fluitans var. *glaciale* Ren. 66.
H. fluitans var. *tenuissimum* Schimp. 67.
H. giganteum Schimp. 75, 76.
H. haeringianum Schimp. 97.
H. hamulosum Bry. eur. 88.
H. Haydenii Lesq. 97.
H. Heerii Schimp. 97, 98.
H. Heppii Heer 98.
H. hollosianum Schilb. 68.
H. incurvatum Schrad. 60.
H. insubricum Farneti 81.
H. intermedium Lindb. 68, 69.
H. irrigatum Zett. 62.
H. Kneiffii (Bry. eur.) Schimp. 64.
H. lignitorum Schimp. 80.
H. Lindbergii Mitt. 87.
H. lutescens Huds. 91.
H. lycopodioides Brid. 69.
H. lycopodioides Weber 100.
H. Mastodontum Boul. 98.
H. molle Dicks. 80.
H. molluscum Hedw. 83.
H. Noegerrathii Weber 63.
H. ochraceum Turn. 80.
H. oeningense Schimp. 57.
H. palustre Huds. 81.
H. plumula Schimp. 98.
H. polygamum (Bry. eur.) Wils. 82.
H. praelongum L. 94, 95.
H. pratense Koch 88.
H. priscum Schimp. 98.
H. protensum Brid. 82.
H. purpurascens Limpr. 65.
H. purpurascens var. *Rotae* (De Not.) 66.
H. purum L. 93.
H. recurvans Schwaegr. 88.
H. reptile (Rich.) 88.
H. revolvens Sw. 69, 70.
H. Richardsoni (Mitt.) Lesq. et James 77.
H. rutabulum L. 92.
H. salebrosum Hoffm. 93.
H. Saprostanum Schimp. 99, 104.
H. sarmentosum Wahl. 77, 78.
H. Schimperii Heer 97, 99.
H. Schimperii (Ung.) Schimp. 99, 104.
H. Schreberi Willd. 86.
H. scorpioides L. 70, 71.
H. Sendteri Schimp. 72.
H. sericeum L. 90.
H. splendens Dill. 85.
H. squarrosus L. 84.
H. stellatum Schreb. 83.
H. stramineum Dicks. 78.
H. striatum Schreb. 96.
H. strigosum Hoffm. 96.
H. Swartzii Turn. 95.
H. Taramellianum Farneti 68, 99.
H. trichoides Neck. 90.
H. trifarium (Web. et Mohr) 72, 73.
H. turgescens Jens. 73.
H. Ungerii Schimp. 99, 102.
H. Vaucheri Lesq. 89.
H. velutinum L. 93.
H. vernicosum Lindb. 74.
H. viride Hartz 99.
H. Weberianum Goeppe. 72, 100.
H. Wilsoni Schimp. 74.
H. species? Hollós 68.
H. species 100.
Isopterygium Mitt. 89.
I. pulchellum (Dicks.) Jaeg. 89.
Isothecium Brid. 53-54.
I. myosuroides (Dill.) Brid. 53.
I. myurum (Poll.) Brid. 53.
I. viviparum (Neck.) Lindb. 53.
Leersia alpina Lindb. 27.
L. rhabdocarpa Lindb. 27.
Lembophyllaceae 53-54.
Leptobryum Wils. 31.
L. pyriforme (L.) Wils. 31.
Leptodictyum riparium (L.) Warnst. 59.
Lescuraea Bry. eur. 55.
L. striata (Schwaegr.) Bry. eur. 55.
Leskea Hedw. 55-56.
L. polycarpa Ehrh. 55.
L. species 56.
Leucodon Schwaegr. 50.
L. sciurioides (L.) Schwaegr. 50-51.
Leucodontaceae 50-51.
Limprichtia intermedia (Lindb.) Loeske 69.
L. vernicosa (Lindb.) Loeske 74.
Lycopodites Meekii Lesq. 100.
L. squamatus Brongn. 105.
Meesea Hedw. 41-43.
M. Albertini Bry. eur. 41.
M. longiseta Hedw. 42.
M. trichodes (L.) Spruce 42.
M. triquetra (L.) Aongstr. 42, 43.
M. triquetra var. *timmioides* Sanio 42.

- M. tristicha* (Funck) Bry. eur. 42.
 Meeseaceae 41-43.
 Mniaceae 36-40.
Mniobryum Limpr. 33.
M. albicans (Wahl.) Limpr. 33.
M. albicans var. *glaciale* Limpr. 35.
Mnium L. 36-39.
M. affine Bland. 36, 38.
M. affine var. *integrifolium* Lindb. 36.
M. antiquorum Card. et Dixon 37, 102.
M. cinclidioides (Blytt) Hübén. 37.
M. curvatulum (Lindb.) Limpr. 37.
M. cuspidatum (L.) Leyss. 37.
M. hornum L. 37.
M. hymenophylloides Hübén. 37, 38.
M. marginatum (Dicks.) P. Beauv. 38.
M. medium Bry. eur. 38.
M. punctatum (L.) Hedw. 38.
M. riparium Mitten. 38.
M. rostratum Schrad. 39.
M. rugicum Laur. 39.
M. subglobosum Bry. eur. 38, 39.
M. undulatum (L.) Weis 39.
M. species 39.
Mollia tortuosa Lindb. 25.
Muscites Brongn. 101-104.
M. apiculatus Goepp. et Ber. 26, 101.
M. Bertrandii Lignier 101.
M. confertus Goepp. et Ber. 24, 101.
M. dubius Goepp. et Ber. 101.
M. elatinus Sap. 57, 102.
M. elegans Goepp. 102.
M. fontinaloides Ung. 102.
M. Hauchecornei Casp. et Klebs 102.
M. hirsutissimus Goepp. et Ber. 102.
M. hypnoides Ung. 99, 102.
M. intricatus Sap. 102.
M. joursacensis Marty 103.
M. oeningensis Braun 57, 103.
M. pereger Sap. 103.
M. polytrichaceus Ren. et Zeill. 103.
M. pulvinatus Sap. 103.
M. redivivus Sap. 104.
M. Schimperii Ung. 99, 104.
M. serratus Goepp. et Ber. 54, 104.
M. setosus Sap. 104.
M. squamatus Brongn. 105.
M. Sternbergianus Dunker 105.
M. tortifolius Casp. et Klebs 105.
M. Tournalii Brongn. 49, 105.
Najadita Bruckm. 105.
Neckera Hedw. 51-52.
N. complanata (L.) Hübén. 51.
N. crispa (L.) Hedw. 52.
N. pennata (L.) Hedw. 52.
N. pumila Hedw. 52.
N. species 52.
 Neckeraceae 51-53.
Oligotrichum Lam. et De Cand. 45.
O. hercynicum (Huds.) Lindb. 45.
Oncophorus Brid. 20.
O. virens (Sw.) Brid. 20.
Oreoweisia De Not. 20.
O. serrulata (Funck) De Not. 20.
Orthothecium Bry. eur. 54.
O. chryseum (Schwaegr.) Bry. eur. 54.
O. intricatum (Hartm.) Bry. eur. 54.
O. rufescens (Dicks.) Bry. eur. 54.
 Orthotrichaceae 30-31.
Orthotrichum Hedw. 31.
O. diaphanum (Gmel.) Schrad. 31.
O. species 31.
Oxyrrhynchium Warnst. 94-95.
O. praelongum (Bry. eur.) Warnst. 94-95.
O. rusciforme (Neck.) Warnst. 95.
O. speciosum (Brid.) Warnst. 95.
O. Swartzii (Turn.) Warnst. 95.
Paludella Ehrh. 41.
P. squarrosa (L.) Brid. 41.
Phascum L. 26.
P. cuspidatum Goepp. 26.
Philonotis Brid. 43-44.
P. alpicola Jur. 44.
P. calcarea (Bry. eur.) Schimp. 43.
P. coespitosa Wils. 43.
P. fontana (L.) Brid. 43-44, 56, 103.
P. fontana var. *ampliretis* Dixon 44.
P. fontana var. *glacialis* 44.
P. seriata Mitt. 44.
P. tomentella Mol. 44.

- P. species* 44.
Pinnatella (C. M.) Fleisch. 53.
P. alopecuroides (Hook.) Fleisch. 53.
P. species 53.
Plagiopodopsis Britton et Hollick 43.
P. Scudderii Britton et Hollick 43.
Plagiothecium Bry. eur. 89-90.
P. denticulatum L. Roeseanum Hamp. 89.
P. latebricola (Wils.) Bry. eur. 89.
P. Muehlenbeckii (Schimp.) Bry. eur. 89.
P. pulchellum (Dicks.) Bry. eur. 89.
P. Roeseanum (Hamp.) Bry. eur. 89.
P. Ruthei Limpr. 89.
P. Ruthei var. *rupincola* Limpr. 89.
P. silvaticum (Huds.) Bry. eur. 89.
P. striatellum (Brid.) Lindb. 89.
P. undulatum (L.) Bry. eur. 90.
Pogonatum P. Beauv. 45-46.
P. suburnigerum (Goepp. et Menge) Dixon 45.
P. urnigerum (L.) P. Beauv. 46.
Pohlia Hedw. 32-33.
P. albicans Lindb. 33.
P. commutata (Schimp.) Lindb. 32.
P. cruda (L.) Lindb. 32.
P. cucullata (Schwaegr.) Bruch 32.
P. longicolla (Sw.) Lindb. 32.
P. Ludwiggii (Spreng.) Lindb. 32.
P. nutans (Schreb.) Lindb. 32.
P. sphagnicola (Bry. eur.) Lindb. 33.
 Polytrichaceae 45-48.
Polytrichum L. 46-48.
P. alpinum L. 46.
P. attenuatum Menz. 46.
P. commune L. 46.
P. Florissanti Knowlton 47.
P. gracile Menz. 47, 101.
P. juniperinum Wild. 47, 101.
P. piliferum Schreb. 47.
P. pilosum Floercke 47.
P. sexangulare Floercke 47.
P. strictum Banks 47, 48.
P. strictum var. *alpestre* Limpr. 48.
P. subseptentrionale Goepp. et Menge 48.
P. subundulatum Goepp. et Menge 45.
P. suburnigerum Goepp. et Menge 45.
P. species 48.
Porotrichum alopecurum (L.) Mitt. 53.
 Pottiaceae 24-28.
Pseudocalliergon trifarium (Web. et Mohr) Loeske 73.
P. turgescens (Jens.) Loeske 73.
Pseudoleskea Bry. eur. 56.
P. atrovirens (Dicks.) Bry. eur. 56.
P. filamentosa (Dicks.) Broth. 56.
P. patens Limpr. 56.
Ptilium (Sull.) De Not. 87.
P. crista-castrensis (L.) De Not. 87.
Pylaisia Bry. eur. 54.
P. polyantha (Schreb.) Bry. eur. 54.
Rhacomitrium Brid. 29-30.
R. affine Lindb. 29.
R. canescens (Weis) Brid. 29, 30.
R. fasciculare (Schräd.) Brid. 30.
R. heterostichum (Hedw.) Brid. 30.
R. heterostichum var. 29.
R. hypnoides (L.) Lindb. 30.
R. lanuginosum Brid. 30.
R. patens (Brid.) 30.
Rhynchosostegium Bry. eur. 96.
R. Knowltoni E. G. Britt. 96.
Rhynia Kidst. et Lang 106.
Rhytidadelphus (Lindb.) Warnst. 84.
R. loreus (Dill.) Warnst. 84.
R. squarrosus (L.) Warnst. 84.
R. triqueter (L.) Warnst. 84.
Rhytidium (Sull.) Kindb. 85.
R. rugosum (Ehrh.) Kindb. 85.
Schistidium alpicola var. *rivulare* Limpr. 28.
Schistophyllum adiantoides Brid. 23.
S. juleanum (Sav.) Lindb. 23.
Schlotheimia tenuifolia Sternb. 105.
Scleropodium Bry. eur. 93.
S. purum (L.) Limpr. 93.
Scorpidium scorpioides (L.) Limpr. 71.
Scorpiurium Schimp. 93.
S. deflexifolium (Solms) Schimp. 93.
Sematophyllum recurvans (Schwaegr.) E. G. Britt. 88.
Sequoia Haydenii (Lesq.) Cock. 97.

- Sphaerocephalus palustris* (L.) Lindb. 40.
 Sphagnaceae 12-17.
Sphagnum Ehrh. 12-17.
S. acutifolium Ehrh. 12.
S. brevifolium Röhl 15.
S. compactum De Cand. 12.
S. cuspidatum Ehrh. 13, 14.
S. cymbifolium Ehrh. 13, 14.
S. fimbriatum Wils. 13.
S. Girgensohnii Rüss. 14.
S. imbricatum (Hornsch.) Rüss. 14.
S. intermedium Hoffm. 14, 15.
S. Lindbergii Schimp. 14.
S. Ludwigii Schimp. 14.
S. magellanicum Brid. 14.
S. medium Limpr. 14, 15.
S. palustre Linn. 13, 15.
S. papillosum Lindb. 15.
S. recurvum P. Beauv. 15.
S. recurvum var. *parvifolium* Warnst. 15.
S. rubellum Wils. 15.
S. squarrosum Pers. 15.
S. subbicolor Hampe 15.
S. subsecundum Nees 14, 16.
S. teres Aongstr. 13, 16.
S. Wilsoni Röhl. 15, 16.
S. species 16, 17.
Sphenolepidium Sternbergianum (Dunk.) 105.
 Splachnaceae 31.
Splachnum L. 31.
S. ampullaceum L. 31.
S. sphaericum (L. f.) Sw. 31.
Sporogonites Halle 105-106.
S. exuberans Halle 17, 106.
Stereodon (Brid.) Mitt. 87-89.
S. arcuatus Lindb. 87.
S. callichrous Brid. 87.
S. chryseus (Schwaegr.) Bry. eur. 54.
S. cupressiformis (L.) Brid. 87.
S. cupressiformis var. *filiiformis* (Brid.) 87.
S. fastigiatus Brid. 88.
S. fertilis (Sendtn.) Lindb. 88.
S. hamulosus (Bry. eur.) Lindb. 88.
S. pallescens (Hedw.) Lindb. 88.
S. pratensis (Koch) Warnst. 88.
S. recurvans (Schwaegr.) Broth. 88.
S. reptilis (Rich.) Mitt. 88.
S. revolutus Mitt. 89.
S. Vaucheri (Lesq.) Lindb. 89.
Swartzia montana Lindb. 18.
Thamnium Bry. eur. 53.
Th. alopecurum (L.) Bry. eur. 53.
Th. species 53.
Thuidium Bry. eur. 56-58.
Th. abietinum (Dill.) Bry. eur. 56.
Th. antiquum Schimp. 56.
Th. Blandowii (Web. et Mohr) Bry. eur. 58.
Th. decipiens De Not. 62.
Th. delicatulum (Dill.) Mitt. 57.
Th. elatinum (Sap.) Schimp. 57, 102.
Th. lanatum (Stroem.) Hagen 59.
Th. minutulum (Hedw.) Bry. eur. 57.
Th. oeningense (Braun) Schimp. 57.
Th. Philiberti Limpr. 58.
Th. Philiberti var. *pseudo-tamarisci* (Limpr.) Ryan et Hagen 58.
Th. recognitum Lindb. 57, 58.
Th. tamariscinum (Hedw.) Bry. eur. 58.
Th. species 58.
 Timmia Hedw. 44-45.
T. austriaca Hedw. 44.
T. bavarica Hessel. 45.
T. megapolitana Hedw. 45.
T. norvegica Zett. 45.
 Timmiaceae 44-45.
Tomenthypnum nitens (Schreb.) Loeske 91.
Tortella Limpr. 25.
T. fragilis (Hook. f. et Wils.) Limpr. 25.
T. inclinata (Hedw. f.) Limpr. 25.
T. tortuosa (L.) Limpr. 25.
Tortula Hedw. 27.
T. aciphylla Hartm. 27.
T. aciphylla var. *mucronata* Sendtn. 27.
T. norvegica (Web.) Wahl. 27.
T. ruralis (L.) Ehrh. 27.
T. species 27.
Trichosteleum Boschi (Doz. et Molk.) 104.
Trichostomum Hedw. 25.
T. polyphyllum 25.
T. polystichum (? in Goepp. et Menge) 25.
T. strictum (Sw. or Bry. eur.) 25.
T. subpolystichum Goepp. et Menge 25.
T. substrictum Goepp. et Menge 25.
 Uota Mohr 31.
U. curvifolia (Wahl.) Brid. 31.

- | | |
|-------------------------------|----------------------------------|
| Warnstorffia exannulata | W. nutans Hedw. 32, 33. |
| (Guemb.) Loeske 66. | W. sphagnicola Schimp. 33. |
| Webera albicans Schimp. 33. | Weisia Hedw. 24. |
| W. commutata Schimp. 32. | W. conferta Schimp. 24, 101. |
| W. cruda (L.) Bruch 32. | Widdringtonia helvetica Heer 97. |
| W. cucullata (Schwaegr.) | |
| Schimp. 32. | Zygodon Hook. et Tayl. 31. |
| W. longicolla (Sw.) Hedw. 32. | Z. viridissimus (Dicks.) R. Br. |
| W. Ludwigii Schimp. 32. | 31. |
-